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EDITORIAL.

THE majority of our readers will remember quite well that the centenary of the discovery of oxygen by Dr. Priestley was celebrated on the 1st of August, 1874, at Northumberland, in Pennsylvania, and many of them will also recollect that on the same day a statue of him, in marble, was erected at Birmingham, England. This statue, by an English sculptor, is the subject of an engraving which we have the pleasure of presenting to our subscribers with this number, there being a special propriety in offering as our first portrait, that of one who has been called "the father of modern chemistry." In this connection it may not be amiss to give a brief sketch of some of the important events in his life.

Dr. Joseph Priestley was born at Fieldhead, in Yorkshire, on the 13th of March, 1733, and was the son of a cloth-dresser. In the holidays during his attendance at the free grammar-school, in which he obtained his preliminary education, he learned Hebrew and acquired a knowledge of Chaldaic, Syriac, Arabic, French, Italian, and German. Following an academic course in a dissenting school, he became a theologian, and, still later, the pastor of a large congregation in Leeds. While here he experimented and wrote much upon languages, theology, and physics, and it was during this period of his life that he published, by the advice and with the assistance of Dr. Franklin, a treatise on the "History and Present State of Electricity, with Original Experiments," which gained for him the degree of LL.D. from the University of Edinburgh. Other scientific papers were on the "History and Present State of Discoveries Relating to Vision, Light, and Colors," "Water Impregnated with Fixed Air," and "Observations on the Different Kinds of Air." The latter was rewarded by the Copely medal, the highest honor of the Royal Society, which elected him a member. During this year (1772) he discovered oxygen, which he called dephlogisticated air; showed that the changes which take place in the color of the blood is due to oxygen; demonstrated the abstraction of oxygen from the air during combustion and putrefaction, and recognized the properties of vegetables to restore oxygen to the air. He also discovered nitrous oxide gas, carbonic oxide gas, sulphurous oxide gas, ammoniacal

gas (which he called alkaline air), and hydrochloric acid gas; and he was the principal inventor of the pneumatic trough.

In 1791, through the excitement caused by his religious publications, he was obliged to remove from Birmingham, where he was then living; and still later he left the country altogether, and came to the United States, landing in New York on the 4th of June, 1794. In this country he took up his residence with his son, a farmer in Northumberland, Pa., and continued his studies and writings until shortly before his death, which occurred in 1804. A list of his productions, compiled in the library of Congress for the recent Centennial celebration, enumerated more than three hundred published books and pamphlets on chemistry, history, theology, metaphysics, physics, politics, and miscellaneous subjects.

The figure from which the engraving was made is of colossal height, and represents the philosopher in the dress of his period. On a kind of pedestal by his side rests a cup in which he supports an inverted test-tube with one hand, while with the other he holds a burning-glass, the rays from which he is engaged in focusing on the tube and its contents. We are indebted to the *Art Journal* as the source of our illustration.

Our English pharmaceutical brethren appear to be always in trouble. When they are not inventing and enforcing restrictions on the admission of new men into the business, they are battling with the doctors on the subject of "counter prescribing;" or, when a lull occurs in this feud (which has become a stand-by), they are exercised about the public analysts. Anon some belligerent doctor brings wholesale charges against them, that they give short weight, and an irate ant-hill could not be more lively than they become. Just now they have succeeded in starting a Mutual Defense Association, and are prepared to settle down with all the dignity of a corporate organization, when it is discovered by some ne'er-do-well that "milk of sulphur" is more than half plaster-of-Paris; and although, for generations almost, the British Public (with a capital P) has used, approved of, and flourished on the compound, and utterly refused to be wheedled into buying or taking the sulphur without the plaster, we have thunder out of a clear sky in the shape of a number of indictments and one conviction for selling adulterated sulphur. But the end is not yet reached, for another trouble looms up on the pharmaceutical horizon. Several months ago we commenced to hear grumblings and complaints from the "elect" in regard to the wicked ways of the co operative stores. We have some of these institutions in this city, where subscribers to the fund can purchase supplies of all kinds at their wholesale cost, *plus* the expense of running the concern; but we have not yet heard that they have included the dispensing of medicines. We have little doubt that they will, if there is ever enough general sickness here to give either the doctors or the druggists anything to do; as it is, the temporary salvation of the latter is owing to the appalling healthfulness of the community.

For some time the sale of patent medicines, toilet articles, soda water, and the multitude of little traps which the pharmacist has gladly resorted to in order to support the expense of carrying on his legitimate business, has been taken up by the fancy stores and, indeed, by some which are of higher grade in the business scale, and the following list, which we made up a few days ago from the show-case of one of the favorite establishments where ladies do their shopping, although incomplete, is still sufficient to show the tendency of the age:

Spikenard Ointment,
Schenck's Mandrake Pills,
Dalley's Pain Extractor,
Mrs. Winslow's Soothing Syrup,
Magic Cure for Chills,
Carbolate of Iodine Inhalant,
Carbolic Salve,
Brandreth's Pills,
Ayer's Cathartic Pills,
Rigolot's Mustard Paper,
Laird's Bloom of Youth,
About half a dozen hair restorers,
and soaps, perfumes, cosmetics, etc., etc., *ad libitum*.

At this store every purchaser to the extent of a small amount, used to get as a premium during the summer a glass of soda water. It apparently requires but one move more to include the "Operating Chemist" with his dispensing counter and bottles of colored water.

This is what one of our English contemporaries says about the state of things on his side of the ocean:

"In all patented articles, either for the toilette or otherwise, the [co-operative] stores still have an undeniable advantage over the shops; and this is also the case in respect of patent medicines, drugs, and making up prescriptions. The reduction of price in these things varies from one-half to one-third. But this is because the chemists and druggists are reluctant to relinquish their enormous profits, and have not yet opened their eyes to the fact that they are gradually driving their custom from their doors. If any enterprising druggist were to start a couple of shops with a guarantee that qualified assistants should dispense pure drugs at co-operative prices, he would be certain of well-merited success."

To judge from the remarks of the same authority, it is the surly and slovenly character of the service at the co-operative stores which alone prevents their more general patronage.

A bad feature of their case is the fact that the British pharmacists seem to have entered into an agreement with the Public some time ago, that the protection of the interests of the latter required that restrictions should be placed around the sale of "poisons" and the dispensing of medicines. Whatever advantage accrued to the Public, it was

quite certain that, to a limited extent, it gave a monopoly to the pharmacists, and many of these troubles seem to have grown out of this form of class legislation. We are glad that our pharmacists have escaped these dilemmas, and hope that they will have the wisdom to avoid the cause.

NOTHING of a therapeutical character has made such an excitement among the non-professional public for years as General Pleasanton's Blue-Glass Cure is creating just now. It is *the* topic in social circles, and a house with a southern window is not considered to be furnished until it has a foot-square of blue glass suspended in it. The experiments are said to be most popular among those ladies whose adipose tissue is rather scant in comparison with their osseous development, and great things are in anticipation. Now is the chance for some of our pharmaceutical friends to make hay while blue sunshine is in fashion.

IT will be remembered by some, that three years ago a bill was passed to regulate the practice of medicine and surgery in this State, and although it was ostensibly in the interests of the non-professional class, still, as is generally the case in so-called "medical legislation," the trouble and expense of bringing offenders to justice were thrown upon the respectable members of the profession. It could not be said then that they had pecuniary motives for prosecuting the scallawags, whatever may have been the criticisms; but the bill which is now before the Legislature not only requires the presidents and secretaries of medical societies to assume the duties of the district attorney, but it provides for the paying of the fine into the treasury of the prosecuting society.

We do not know with whom these bills originated, but we earnestly wish they could be brought to the understanding that respectable physicians need no protection from quacks, and be led to comprehend that it is none of the business of doctors to do the work of the district attorney's office.

Another point worthy of comment is the requisition of a fee for registering the names of those whom the public are supposed to be safe in trusting. Perhaps the wise men at Albany think that the doctors are to make so much money out of their prosecution of the "unqualified" that they ought to divide the spoils.

WE regret to learn that the Massachusetts College of Pharmacy has suffered severe losses from fire, which occurred early on the morning of January 23d. A large portion of the collections and library have been destroyed or damaged, but it is hoped that the insurance may cover the losses. Aid has been tendered from other schools, to enable their sister college to complete her course; and when the next session begins, we expect to see our Boston friends owning their own home.

MATERIA MEDICA.

Theobroma Cacao, and the Detection of the Adulterations of Oleum Theobromæ.

THE tree which furnishes the cacao-seeds of commerce, is a native of the moist woods of the northern parts of South America and of Central America, as far as Mexico. It belongs to the natural family of Buettneriaceæ (or Sterculiaceæ, Lindley,) and attains a height of from twelve to twenty feet. Its fruit is an oblong-ovate capsule or berry, 4–5 inches long, and 2–2½ inches thick, tapering off above, provided with 10 prominent longitudinal ridges, has a yellow or scarlet color when fresh, and a brown color when dry.

The tree bears flowers and fruit at all seasons of the year; these grow out of the trunk and thickest part of the boughs. The little yellow flowers are in clusters, and the fruit when ripe is of a beautiful orange color. As the plant cannot bear the intense heat of a tropical sun, it is shaded by rows of loftier trees, as bananas, or more frequently the Erythrina or Corallina, called by the Spaniards madre de cacao, a tree with superb red blossoms.

The thick coriaceous rind encloses a soft, colorless, sweetish pulp, in which the seeds are imbedded. The latter are ovate, slightly compressed, and consist of an exterior chartaceous, brittle shell, and a brown, or brownish-red oily kernel, devoid of albumen. These seeds constitute the cacao or chocolate-nuts of commerce, and are the source of oleum theobromæ or cacao-butter employed in pharmacy. This substance having been the subject of many complaints during a number of years, the American Pharmaceutical Association in 1875 propounded the following query:

"There is reason for believing that our Oleum Theobromæ is largely adulterated. How can the adulterations be detected, and to what extent do they exist?"

In answer to this query Mr. Gustavus Ramsperger of New York presented the following paper, which we reprint from the *Proceedings of the Am. Pharm. Assoc.* for 1876.

"The answer to this query is somewhat difficult, as there seems to be no perfectly reliable criterion by which to distinguish the adulterated cacao-butter from the pure. The statements in the books of reference are conflicting, and differ in essential points. The U. S. Pharmacopœia gives no test for purity, neither does Wood & Bache.

The Pharm. Germ. says: "Sit e subflavo album, odoris exigui proprii, saporis mitis, sebo ovillo rigidius, calore 30° liquescens."

The Pharm. of Würtemberg puts the melting-point at 40°, the specific gravity at 0.89–0.91. The Pharmacop. Belgique gives as the density 0.810. Dorvault's Pharmacie Légale gives the melting-point as 24–25° C., and directs that ether be used for detecting adulterations, pure cacao being easily dissolved in 2 parts of ether at com-

mon temperature, the solution remaining clear, while, if adulterated with tallow or wax, the solution becomes turbid.

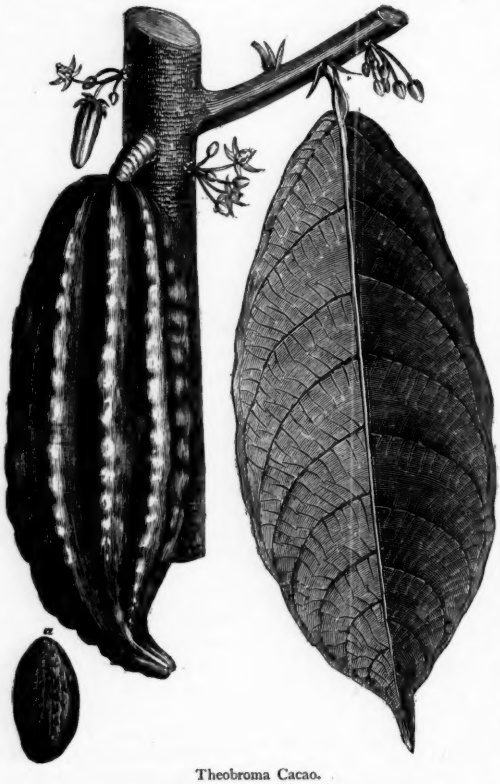
Fehling's 'Handwörterbuch der Chemie' gives similar directions, and adds that if the solution gets turbid at 0° in less than ten minutes, the cacao-butter is adulterated, "the solution of pure cacao-butter shows turbidity only *after* ten or fifteen minutes, such turbidity disappearing again at 19–20° C." According to Hager, pure cacao-butter is soluble in six parts of anilin, and from the clear solution the cacao-butter separates as a clear liquid layer; if the cacao-butter contains tallow, then crystals and grains will separate.

Gmelin gives the specific gravity as 0.89–0.91, and the melting-point at 29–30° C.

Klencke in his "Verfälschung der Nahrungsmittel" puts the melting-point at 24–25° C., that of beef-tallow at 30°, of mutton-tallow at 35°, and of ox-marrow at 37°, but considers the melting-point as no sure criterion. He says that drops of pure liquefied cacao-butter dropped into warm water, remain more or less globular, but if the cacao-butter is adulterated with animal fat, the drops flatten, assuming a lenticular or discoid shape.

Muspratt gives the specific gravity as 0.90, but thinks it is not a test of purity.

The *American Journal of Pharmacy* (vol. xxiii., p. 16), gives the melting-point at 76° F., the congealing point at 60° F.



Theobroma Cacao.

Mr. Henry W. Lincoln, of Boston, in a very interesting essay on this subject in the Proceed. Am. Pharm. Assoc. of 1867, mentions also the test of dropping the cacao-butter into warm water, and further says: "The best test, however, for any adulteration of cacao-butter, is a cultivated taste, such as is only acquired by practice, similar to that employed by dealers in teas and wines, and can hardly be described. The point of fusibility is its first distinction. Bitten and placed on the tongue, it melts quickly and leaves no harsh taste, which it always does when adulterated with wax, spermaceti, tallow or stearin. Dropped on a warm iron, it gives out its odor, and if adulterated largely, the peculiar odor of the article with which it is adulterated will be prominent. There is no doubt that it is sometimes largely adulterated, but although the writer has procured samples from various sources, he has not been able to find any that seem to be adulterated to any great extent, and he is confirmed in this by Dr. Hayes, of Boston." Dr. Squibb, in a discussion about suppositories during the convention of 1870, makes a rather sweeping statement in saying "all the cacao-butter which is made is adulterated."

Hager & Jacobsen's "Industrieblätter" recommends the following method for the discovery of adulteration of cacao-butter: The butter is formed into candles; these are lighted, and then the light blown out, when an adulteration by tallow will be discovered by the smell. This is a more troublesome, and, as I found out by experiments, not more reliable test than the dropping on hot iron, recommended by Mr. Lincoln.

This is about all the information of any importance which I could gather as a guide to find out the best test for the purity of oleum theobromæ.

My experiments I began by preparing a quantity of pure cacao-butter from Caracas beans by three different methods: expression, extraction by ether, and by bisulphide of carbon. The extraction by ether is less practical than by bisulphide of carbon, the former extracting with the fat a purple-colored matter, while the latter extracts the oil only.

To these three different portions of pure cacao-butter I applied some of the above-mentioned tests. In point of solubility in ether, and also in aniline, I found all three alike; not so, however, in their specific gravity and fusibility. The specific gravity of the first was found to be 0.850; of the second, 0.970; and of the third, 0.958. This great incongruity shows the unreliability of the specific gravity test. The melting-point of two specimens I found 31–32° C., of the other, 33–34° C.

Pure cacao-butter dissolves easily within a few minutes at common temperature in two parts of ether, forming a clear solution, which sometimes separates, after standing for awhile, into two clear

layers, the heavier layer being the larger one. My experiments with butter of cacao and anilin (anilin from two different factories) gave a different result from that indicated by Hager. I found one part of butter of cacao soluble in two parts of anilin (not in six parts only), but the solution neither in the first mentioned nor any other proportion ever separated into two layers. It is clear, but when concentrated, somewhat thick, like very thin jelly. On account of this jelly-like appearance of the concentrated solution, anilin is not quite so good a test for adulteration of butter of cacao with paraffin; the latter is a little soluble in anilin, the solution or mixture having a semi-transparent, gelatinous appearance. In ether paraffin is not soluble at a temperature below 40° C. At this temperature ether makes a perfectly clear solution, which at 35° C. congeals, and even diluted with ten parts of ether forms a homogeneous, somewhat crystalline, and solid magma.

Having tested the pure ol. theobromæ, I made mixtures in different proportions of it with several animal and vegetable fats, as beef and mutton tallow (freshly rendered and old), ox-marrow with beeswax, Japan wax, Myrica wax, and spermaceti, and also with paraffin; then made solutions of them with different solvents, as ether, anilin, chloroform, bisulphide of carbon, oil of turpentine, and absolute alcohol, and subjected the mixtures and some of the solutions to the above-mentioned tests. As a result of this great number of experiments I found that none of these tests are infallible, but that several taken together would be a tolerably sure indication of the purity or adulteration of oleum theobromæ.

The best test I found to be ether. It indicated all admixtures which I had made to the cacao-butter, with the exception of ox-marrow, either directly by the turbidity of the solution of one part of the adulterated cacao-butter in two parts of the ether (as is the case with the adulterations by tallow, bees'- and bayberry-wax, and paraffin), or if not immediately after solution, then by becoming turbid after standing for some time, and by forming little crystals and grains by spontaneous evaporation of the solution, which crystals are not soluble again in two parts of ether at common temperature (this is the case with Japan wax and spermaceti, with or without the addition of ox-marrow). Anilin shows adulterations with tallow and wax almost as well as ether. The other above-mentioned solvents cannot be used as tests; all the different fats and wax being easily soluble in them, with the exception of bayberry-wax, which makes a clear solution only with chloroform.

Next to ether and aniline the taste seems to be the most reliable test. The dropping on hot iron or burning the mixtures with wicks, does not show plainly enough an adulteration with 25 per cent. of tallow, and of freshly rendered beef tallow; even 50 per cent. could hardly be recognized. With Klencke's test I did not succeed; I was very seldom able to see any difference in the shape of the drops of cacao-butter from that of tallow or ox-marrow drops on water; the former expanding dish-like over the surface of the warm water about as much as the latter.

The specific gravity is unreliable—as I have shown already. The same seems to be the case with the point of fusibility as a test; at least I found that recently-melted and recongealed cacao-butter melts at a temperature several degrees lower than such as had been melted several weeks before. This may account for the conflicting statements about this point. Guided by the results of the experiments made, I examined a dozen specimens of oleum theobromæ which I had collected in different wholesale and retail stores. The result was as follows:

No.	Specific Gravity.	Melting-Point.	Test.	Solution in Ether or Anilin.
1	0.850	31° C.	Pure.	Clear.
2	0.897	33° C.	Pure.	Clear.
3	0.900	31° C.	A little rancid.	Clear.
4	0.874	30° C.	Pure.	Clear.
5	0.976	34° C.	Not quite pure.	Turbid.
6	0.938	32° C.	Pure.	Clear.
7	0.979	34° C.	Very little rancid.	Clear.
8	0.875	34° C.	Strongly rancid.	Very turbid.
9	0.978	30° C.	Pure.	Clear.
10	0.872	35° C.	Pure.	Very little turbid.
11	0.919	33° C.	Pure.	Clear.
12	0.959	30° C.	Rancid.	Clear.

This shows two or three adulterations among the dozen, one of them with tallow plainly recognizable.

In concluding I must confess that the result of my labors is not quite satisfactory, because I did not succeed in finding a sure test to distinguish ox-marrow from cacao-butter in the mixtures; but I shall continue my researches, and communicate the result, if any, at some later time."

The Manufacture of Cocoa.

As a companion to the above paper by Mr. Ramsperger, we quote the following portions of an interesting article on the manufacture of cocoa, which appeared in the *Hand and Heart*, and was copied by our contemporary, the *Chemist and Druggist*.

It appears that the Spaniards were the first Europeans who tasted chocolate: it was part of their spoil in the conquest of Mexico. Bernardo de Castile, who accompanied Cortez, describing one of Montezuma's banquets, says: "They brought in among the dishes above fifty great jars made of good cacao, with its froth, and drank it," and similar jars were served to the guards and attendants "to the number of two thousand at least." Gage, an old traveller, who had visited the tropics, writing in 1630, remarks: "Our English and Hollanders make little use of it when they take a prize at sea, as not knowing the secret virtue and quality of it for the good of the stomach."

In the reign of Charles II. it was so much esteemed in England that Dr. Stubbe published a book entitled "The Indian Nectar; or, a Dis-

course concerning Chocolate, &c," giving a history of the article and many curious notions respecting its "secret virtue," and recommending his readers to buy it of one Mortimer, "an honest though poor man," who lived in East Smithfield and sold the best kind at 6*s.* 8*d.* the pound, and commoner sorts for about half that price.

Linnæus was so fond of chocolate that he called it food for the gods in the distinguishing name he gave to the tree that produced it—Theobroma Cacao.

The nuts are taken from the pod as soon as collected, and covered with a layer of sand. This causes a fermentation, which develops the aroma and takes off the natural bitterness of the nut. They are then spread out to dry in the drying or curing house. This house consists of a strongly built span roof fixed with wheels, running on iron rails laid along a stout framework, which supports a platform, underneath and upon which the cacao beans are dried.

Prior to 1831 the quantity of cacao annually consumed in England had not reached half a million pounds, whereas it now amounts to over nine millions.

The bags of cocoa, as they arrive from the docks, are stacked up in large piles. They come from different parts of the world—from Trinidad, Grenada, Caracas, Carupano, Surinam, and even from Africa, and there are a few other choice and special varieties.

These cocoa nuts or beans are carefully sorted, and the unsound ones rejected; they are then placed in rotating cylinders and subjected to a gentle heat over coke fires, until the full aroma is properly developed. When cooled they are passed to another room, in which machines are arranged for breaking the now crisp, roasted nut into the irregular segments into which the kernel is naturally divided. The next process is to remove the outer husks by means of a powerful blast. The rich glossy kernel that remains is known in the market under the name of cocoa nibs. The husk or shell is used as a light, but by no means unpalatable table decoction, under the designation of "miserables."

The cocoa nibs are next ground between stones which are arranged like those of a flour-mill, and the stones being heated the nibs are reduced to a creamy fluid, which flows into pans placed to receive it. When quite cold this will turn out a perfectly hard, firm cake. The best cocoa contains about fifty per cent. of natural cocoa oil or butter, and this has been found to be far too large a proportion for ordinary digestions. Dr. Muter says: "The only objection which can and does exist to its use in a state of purity is the excessive proportion of fat, which renders it too rich for most digestions, and gives, unfortunately, a colorable excuse for its adulteration."

The removal of two-thirds of the butter is accomplished by means of very powerful and complicated machinery, the result being an impalpable powder, soluble in boiling water and possessing the nutritious gluten and stimulating theobromine in an increased ratio; and this product is called, by the Cadbury Brothers, who are extensive manufacturers in Birmingham, "Cocoa Essence."

Still there is a demand for cocoa that thickens in the cup; and this comprises a second branch of manufacture. A given portion of the liquid cocoa is poured into a large steam-heated pan, and weighed with the sugar, arrow-root, etc., which of course differ in kind and quality, according to the value of the chocolate powder required. Strong iron arms are then set in motion, which so completely levigate the mass that in a few moments it is reduced to a powder. These chocolate powders are sold under the names of Homœopathic, Iceland Moss, Breakfast, etc.

The third branch of manufacture yet to be noticed is that of sweet chocolate for eating and drinking; and here again we have numerous varieties. In the first place the pure cocoa is incorporated with white sugar in what is called a "mélangeur." This is a round stone basin in which the cocoa and sugar are placed, and which revolves at a great speed, while two heavy stationary rollers bruise the mass until it becomes of about the consistency of dough. From these mélangeurs the mixed substance is at once passed through machines with three granite cylinders which crush it still finer, and in this state it is ready for moulding into the various shapes and sizes for sale.

The best chocolate is flavored with vanilla, which is the fruit or seed-pod of one of those beautiful species of the family Orchidaceæ that flourish in tropical America. The stems climb to the height of twenty or thirty feet, twining round the trunks of trees, and throwing out a profusion of aërial roots, some of which eventually reach the ground. It seems specially adapted for flavoring chocolate, and is used principally for that purpose.

Cocoa carefully selected and prepared in this way certainly forms the most delicious of all beverages or confections.

On the Distribution of Cardiac Poisons in the Vegetable Kingdom.*

(Continued from the January Number.)

3. Ranunculaceæ.

The only known cardiac poison existing in this family is helleboreïn, occurring in *Helleborus viridis* L., *H. niger* L., and *H. fœtidus* L., and accompanied by the narcotic glucoside helleborin.† According to Schroff's investigations, the same glucosides, or at least very similar bodies, appear to exist in many other species of Helleborus. A closer examination of the latter would be highly interesting, as it might throw some light upon the history and action of *Helleborus orientalis* Lam., which was the cardinal remedy for psychical affec-

* Abstract of a paper by Prof. Th. Husemann, of Göttingen, in *Archiv der Pharmacie*, Nov., 1876.

† See "*Pflanzenstoffe*," pp. 796–800.

tions among the Greeks, and the reputed brilliant effects of which are unattainable with the ordinary species mentioned above.

Nearest related to Helleborus is the genus Eranthis, the sole representative of which, *Eranthis hiemalis* Sal., was included in the genus Helleborus by Linné. Vauquelin found in it a soft resin, which he called helleborin, but it remains very doubtful whether this plant contains any glucosides analogous to those of Helleborus.

There is hardly occasion to suspect any cardiac poisons in other members of the sub-class Helleboreæ, although some of them are decidedly poisonous, as for instance, *Caltha palustris* L., which contains, according to Spiritus (1827), an acrid poison acting upon kidneys and skin, while other species of Caltha, as *C. Cadua* Ham., and *C. Bishma* Ham., are more probably to be referred to the genus Aconitum.

4. Leguminosæ.

Only quite recently has there been found a cardiac poison among this family. It is a proximate principle contained in the bark of *Erythrophlæum Guineense* G. Don. (*E. judiciale* Procter), growing near Cape Palmas and in Sierra Leone, and used by the natives as an arrow poison and in ordeals.* It is also known as Mancona bark or Teli. Gallois and Hardy discovered in it an alkaloid † acting similarly to Digitalis. Their physiological experiments, however, were not made with the pure principle, but with the extract, and an exhaustive chemical analysis of mancona bark has not yet been made. Although the sub-order Papilionaceæ, which is so rich in esculent plants, contains more poisonous individuals than is generally supposed, we have no reason to suspect in it the presence of any cardiac poisons. Erythrophlæum is included in the third sub-order of the Leguminosæ, the Mimoseæ, and is nearest related to the genus Parkia, species of which furnish the so-called Sudan Coffee. A few Mimoseæ are emetic; so the root of *Adenanthera Pavonina* L., growing upon Hayti. The bark of *Pithecolobium salutare* Benth., of Columbia, is diuretic; and *Malvia judicialis*, of Mozambique, is used, like mancona bark and calabar bean, in ordeals.

Of domestic Leguminosæ, only a few deserve investigation. *Ononis spicata* L., is known as a diuretic, and contains a glucoside, ononin,‡ which, however, does not appear to have any cardiac effects. The same may be said of scoparin, the supposed active diuretic principle of broom, which contains besides an alkaloid, sparteïn, certainly not a cardiac poison.

5. Artocarpeæ.

From this family§ we have to mention only one representative, the *poison-tree* of Macassar, *Antiaris toxicaria* Lesch., containing a glucoside, antiarin, which is the active principle of the well-known Asiatic arrow-poison, *antiar*, and forms probably also the main constituent of the arrow-poison "dayaksh," used by the Orangdayas or Dyaks, and of some other similar poisons used by the Yatruns and Mintras of Malacca.* Antiaris toxicaria appears to be the only Artocarpea which produces remote poisonous effects. Rumph, who first described the tree, mentions besides an "Arbor toxicaria femina" occurring upon Timor, which was named *Antiaris innoxia* by Bluhme, because it is said to be much less poisonous.

These five families of dicotyledonous plants are the only ones containing cardiac poisons, and if we were to judge from the great superiority in numbers of poisonous dicotyledonous over monocotyledonous plants, we would hardly expect any cardiac poisons among the latter. But we know with certainty two families furnishing representatives.

6. Smilaceæ (Asparageæ).

The cardiac poison belonging to this family is convallaramin, existing in *Convallaria majalis* L., Lily of the Valley, alongside of the drastic purgative glucoside convallarin †). Whether other species of Linné's genus of Convallaria contain the same glucosides, remains to be investigated, but it is quite probable. The flowers and berries of *Convallaria Polygonatum* L., the root of which was used for a long time as medicine under the appellation "Radix Sigilli Salomonis," are emetic and cathartic; and the same is probably the case with *Convallaria multiflora* ‡ L. Another poisonous plant belonging to this family, and known from olden times, is *Paris quadrifolia* L., One Berry, or True Love, the berries of which were called in ancient medical works "baccæ *Solani* quadrifolii," showing that they were considered very active and efficacious. Our knowledge of the toxic action of this plant is, however, very limited, and the only reasons for suspecting it to contain a cardiac poison are its emetic effects, and the discovery therein by Walz of two glucosides, paridin and paristyphnin,§ possibly analogous to those in Convallaria.

Two other species of Paris, growing in northern Asia, namely *P. obovata* Led., and *P. polyphylla* Sm., said to contain an acrid narcotic principle, are likewise deserving of investigation. To these must be added some North American Smilaceæ, related to the genus Paris, namely *Medeola Virginica* L., which, on account of its reputed emetic and diuretic effects, may possibly contain a cardiac poison, and certain species of Trillium, as *T. erectum* L., and *T. grandiflorum* Sal., possessing

* See New Rem., v., 53, 272, 276.

† Prof. Husemann is somewhat astonished at the discovery of an *alkaloid* in this plant by Gallois and Hardy. He should have expected, and even yet suspects *glucosides*. See January number, p. 3.

‡ *Pflanzenstoffe*, 675.

§ Often counted as a sub-order (II.) of Urticaceæ.

* See Husemann, Handbuch d. Toxicologie. Supplement, pp. 62, 63.

† *Pflanzenstoffe*, 1041.

‡ This is actually the case. See King's Dispensatory.—Ed. N. R.

§ *Pflanzenstoffe*, 1042.

emetic properties, although in the latter the *acridity* of root and berries is mentioned as principal characteristic.

7. Liliaceæ.

According to Prof. Husemann's own investigations, made with the Extractum Scillæ of the German pharmacopœia, this family contains an exquisite cardiac poison in *Scilla maritima* L., well known to be an active emetic. The cardiac principle is chiefly contained in the alcoholic extract, and is not identical with the commercial substance scillitin, which was found to exert no toxic action on rabbits, nor to affect the cardiac functions of the frog.

The family of Liliaceæ is known to contain a large number of congeners or surrogates of squill, principally belonging to the sub-order Asphodeleæ, and mostly included in the genera Scilla and Ornithogalum. Such are the East Indian *Scilla Indica* Roxb., the South African (Cape) *Ornithogalum Lassoni* Gm. and *O. scilloides* Jacq.; besides *Drimia altissima* Ker., which is used as a substitute for squills at the Cape; the South European *Agraphis nutans* Lk., and finally *Muscari moschatum* and other species of Muscari. The analogous therapeutic use permits the conclusion of analogous physiological action; in other words, to assume the presence in these plants of a principle augmenting the blood-pressure, and possibly also accounting for the diuretic action of *Anthericum ramosum* L., *A. Liliago* L., and *A. Liliastrum* L.

Still more weighty are the reasons for assuming the presence of a cardiac poison in the bulbs of *Fritillaria imperialis* L., belonging to the sub-order of Tulipaceæ, which appears certainly to belong to the acrid narcotics, as it is reported to produce emesis as well as trembling and subsultus in animals, and phenomena resembling conium-poisoning in man. Orfila has shown that the bulb of this plant produces no *local* effects, but that its action is altogether remote. The bulbs of *Tulipa silvestris* L. and *T. Gesneriana* L. act likewise as emetics, and *Erythronium flavum* Smith is said to have the same property. But it is not unlikely that in these last named plants the effect may be due to local irritation, as we are tolerably certain is the case with the best known poisonous liliaceous plant, *Gloriosa superba* L., superb lily, native of Ceylon and Malabar.

Although these two monocotyledonous families are the only ones which certainly contain cardiac poisons, Prof. Huseman is inclined to suspect the presence of others in the family of Amaryllidaceæ. Several exotic species of the genus Amaryllis have long been known as violent poisons, although our information is rather vague and uncertain. One of these is *Amaryllis disticha* L. (*Hæmanthus toxicarius* Ait.), growing at the Cape, the juice of which, inspissated by exposure to the sun, is said to be used by the Hottentots as an arrow-poison, and the bulb of which is used as a drastic cathartic, according to Rosenthal. The same uses and properties are ascribed to the Brazilian and West Indian *Amaryllis Reginæ* L., and *A. princeps* Vell. *A. Belladonna* L., another native of West Indies, is said to be an emetic, and in larger doses an active poison, 3 gm. of the dried bulb having been known to produce death in three hours. *A. Sarniensis L.*, the so-called Jersey lily, growing at the Cape, *A. equestris* Ait., the South American funnel lily, and *A. pudica* L., the red Cayenne lily, appear to have similar properties.

More probable yet is the presence of a cardiac poison in various species of the genus *Crinum*, as *C. Zeilanicum* L., and *C. Asiaticum* L., the latter being known, under the name bakoun, as a Malay antidote against intoxication by poisonous fish, crabs and serpents, or poisoned arrows. Both are held to be emetics, and *C. Zeilanicum* is used in China and Cochin China exactly like our squills. Several species of *Hymenocallis* and *Pancratium* partake of the same properties; of the latter particularly the Mediterranean *P. maritimum* L., the bulb of which has now and then been used as a regular substitute for squill, and was even known as "Radix scillæ minoris."

Of European Amaryllidaceæ, the most likely to contain a cardiac poison is *Narcissus pseudonarcissus* L., or daffodil, if we may draw a conclusion from the effects obtained by Orfila upon dogs; namely, repeated emesis, intoxication with consciousness, deep inspirations, falling upon the side, dyspnœa, and death free from convulsions. The same effect is probably inherent in *N. poeticus* L., cases of poisoning by which are on record; and possibly also in *Leucojum æstivum* L., *L. vernum* L., and *Galanthus nivalis* L.

All these facts make it probable that among the hitherto known, but unstudied, poisonous plants, there are many which must be classed with the cardiac poisons. At the same time, we see how fragmentary is our knowledge of the physiological action of plants, and how large a material for pharmacodynamic investigations remains to us for study. In conclusion, Prof. Husemann hopes that some of the problematical plants mentioned may be made the subject of closer investigation.

"Takout," or Tamarisk Galls.

Professor Vogl, of the Imperial University, Vienna, writes the following communication to the *Wiener Gerber*, which we copy from the *Chemist and Druggist* for January.

Amongst other North African drugs which were brought under the notice of the Pharmacological Institute of the Imperial and Royal University, through the medium of the late Vienna Exhibition, was a large sample of Tamarisk galls, from Morocco, entered under the name of "Takout." As these gall-nuts have lately attracted some attention on account of the large proportion of tannin they contain, a few remarks respecting them may not be out of place.

Taramisk galls are imported, not only from Morocco, but from Algeria, parts of Central Asia, and India. Gall-nuts are produced on most, if

not upon all, species of Tamarisk, but those known in commerce, it would seem, are found upon one sort only, the *Tamarix articulata* of Vahl, or *Tamarix orientalis* of Forskal. The Morocco and Algerian Takout have this origin. Leared, in his memoirs on the drugs of Morocco, assigns them to *T. articulata*, Vahl. They are evidently the same as those described under the head of gall-nuts, in Prosper Albinus's discourse on the plants of Egypt. Probably, too, they are identical with the gall-nuts employed in Persia for industrial and pharmaceutical purposes. Hanbury and Flückiger state that the galls of *T. orientalis* are used in India as a substitute for oak-galls. These appear to be the same as those described by J. Wiesner ("Rohstoffe des Pflanzenreiches," p. 809), as known in India under the name of "Padwus," and a product of *T. Furas*. A sample in our collection, labelled "Bokhara Galls," the produce of *T. Furas*, agrees in all respects with the Morocco "Takout." The latter are also most likely the same as the "Bucharest Galls" described by Palm, which, under the name of "Busgunsh," are largely used for dyeing in Central Asia, more especially in the Khanates of Khokand, Khiva, and Bokhara.

The Morocco galls vary in size from a peppercorn to a hazel-nut, or even larger, and present an infinite diversity of shapes, the greater number being egg or kidney shaped, lobed, oblong, or round, and of irregular contours. Their surfaces are rough and warty, of a dull earthen gray, with a shade of yellowish brown, or purplish or reddish brown, on one side. Sometimes they are yellowish brown on one side and brownish red on the other. They are hard; some of them, the large ones, brittle; friable between the fingers with a slight pressure; the smaller ones are imperforate, the larger have one circular perforation, by which the insect has made its escape in the perfect state. Their interior is of spongiform texture, of a yellowish or greenish brown color, containing a cavity of irregular shape. As in the Chinese and Japanese galls, traces of aphides and mould often occur in them.

The substance of Tamarisk galls is made up of an epidermis of close cellular texture, enclosing a parenchyma of small, fine-pointed cells, arranged polyhedrically or axially, and interlaced with strands of bark-like fibre, and a few pigmentary cells.

The cells of the epidermis contain a dry pigment, which is also found irregularly distributed in some of the cells of the parenchyma, together with a few rosettes of oxalate of lime. This pigment dissolves readily in water. With soda lye it gives a yellow dye, the solution forming a purplish glaze upon the surface by contact with the air. With salts of iron it gives an indigo blue. Dissolved in soda lye and treated with acetic acid, with the addition of a solution of chloriodide of zinc, it produces a deep blue color. The tannic principle in these galls closely resembles that in oak bark and valonia, whilst the same principle in Pistacia galls resembles rather that of oak galls and sumach.

Tamarisk galls exhibit no traces of fecula, and are apparently devoid of resiniferous and lactiferous ducts. The absence of these ducts distinguishes them from *Rhus* galls (Chinese and Japanese galls), and from Pistacia galls, *i.e.*, the leaf-galls of *Pistacia Terebinthus* and *P. Lentiscus*, which are largely collected in the East, and used for the same purposes as Tamarisk galls.

The latter are also distinguishable by their smooth surfaces, larger size, and the occurrence of a resinous balsam in their substance.

To the Pistacia class probably belong certain "Bokhara Galls," produced on *Pistacia vera*. At least, we have a sample before us formed on this species. These galls are round, ovoid, or oblong; their surface smooth, without corrugations, of a light yellowish red, sometimes shining, with a very thin, coriaceous, translucent, violet-brown cuticle, and a single perforation, the structure resembling that of the galls on *P. Terebinthus* and *P. Lentiscus*. The proportion of tannin in them is 32 per cent. In Tamarisk (Bucharest) galls, according to Palm, it is 43 per cent.

PHARMACY.

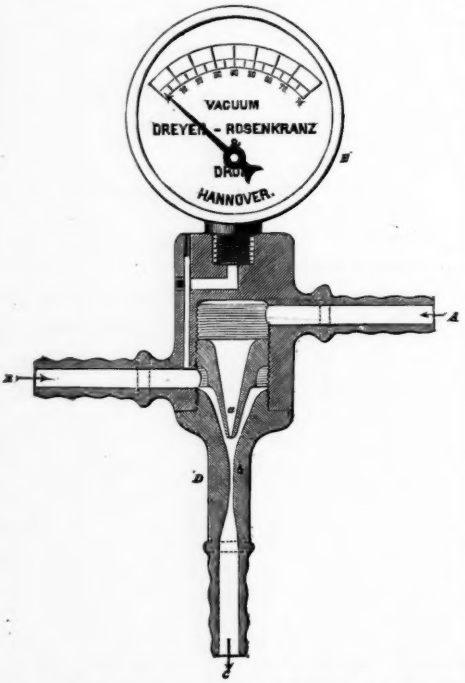
Carbolated Camphor.

M. SOULEZ, in the *Bulletin de Thérap.*, gives the following formula for carbolated camphor and an account of its composition: Dissolve 2.5 grammes of powdered camphor in one gramme of a solution of carbolic acid (of the strength of nine grammes in six grammes of alcohol). The solution is of oleaginous consistency, pale yellow, smelling slightly of camphor, but having none of the disagreeable odor of carbolic acid. It boils at a slightly elevated temperature without decomposing, but appears to be decomposed by strong alcohol, which throws down the camphor in crystals. If a boiling solution of carbolated camphor be thrown into cold water, it instantly solidifies. It is miscible in all proportions with olive and almond oils. Chemical examination shows that the carbolic acid and camphor are not altered, and that they preserve their properties in the combination.

Filtering Apparatus.

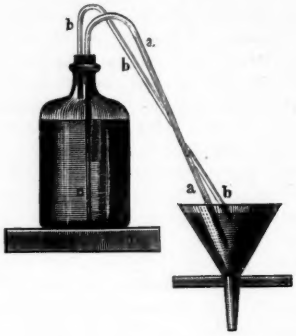
MANY of our readers are no doubt familiar with some of the modifications of the so-called 'quick filter' or 'rapid filtering apparatus,' the most perfect form of which is that introduced by Prof. Bunsen, and now used in most chemical laboratories. The action depends upon the fact, that a column of water descending through a tube from a considerable height, is capable of drawing after it the air contained in a side tube, provided the latter is attached in such a manner that the falling water can not enter it. The side tube communi-

cates with a reservoir of air, which thereby becomes exhausted. Supposing this reservoir to be a flask provided with a doubly perforated stopper, of which one aperture carries a funnel with filter, while the other contains a short glass tube, connected with the side-tube of the 'quick filter,'—the air in the flask will become exhausted, and the pressure of the outer air upon the surface of the liquid in the filter will cause a rapid flow into the flask. There are of course a number of details to be attended to, such as strengthening the point of the filter, perfect attachment of the latter to the funnel etc., but it is hardly necessary to dwell upon these here. Our object is to describe a very handy form of quick filter, which was designed by Hermann Fisher for *water pressure* (not falling water), and to be used upon any portion of the work-table in the laboratory. *A*, *B* and *C*, in the annexed cut, are intended to receive rubber tub-



ing, and the neck *D* may be fastened by a clamp to an ordinary retort-stand. The water entering at *A* passes through the inner nipple *a*, becomes mixed with the air which it attracts from the filtering apparatus through *B*, and after passing the contracted portion at *b*, flows off through *C*. Since it is desirable in many operations to control the amount of rarefaction, a vacuum gauge is attached to the upper portion. The apparatus is manufactured by Dreyer, Rosenkranz and Droup in Hannover, Germany, and costs ten marks without, and twenty marks with gauge.

While speaking of filters, we desire to recall to the minds of our readers that they might frequently save themselves a great deal of unnecessary labor, and even annoyance, especially when filtering a large bulk of liquid, if they were to use the well-known self-acting syphon-filter, on the principle



of the one represented in the cut. It is almost needless to state that the tube *b*, which just dips below the surface of the liquid when the filter is full, permits the entrance of air into the bottle, as soon as the level of liquid in the filter descends; in consequence thereof the syphon-tube *a* refills the funnel until the orifice of *b* is again closed by the liquid.

Another form of filter, which is very convenient for the rapid filtration of oils, syrups and other viscous liquids, is the 'water-bath filter,' or 'hot filter.' This is an old contrivance, but appears to have fallen almost into disuse. It does not require any detailed description; but it will be sufficient to say, that in place of applying heat to

the projecting tube *b*, a current of live steam may be introduced into it, by means of appropriate connections; the surplus steam being carried off by *e*.

New Method of Determining Sugar Volumetrically.

For the purpose of controlling the termination of the reaction in Knapp's method of estimating glucose (by means of mercuric cyanide), R. Sachsse employed an alkaline solution of stannous chloride, prepared by supersaturating a solution of the commercial tin-salt with soda. This reagent throws down mercury, from alkaline solutions, as a black or brown precipitate, according to the quantity of mercury present. A few drops of the reagent are placed into a small porcelain capsule, and one or two drops of the mercury solution are added: the least trace of mercury remaining in solution is indicated by the formation of a brown spot or cloud. At Sachsse's request, the method was critically tested by Brumme, who found that the results are not accurate; but the sharpness of the end-reaction led them to examine other mercurial salts, with a view of finding a suitable substitute for the cyanide, which they finally discovered in an alkaline solution of mercuric iodide. For this purpose, 18 gm. of pure and dry mercuric iodide, HgI_2, are dissolved in water by means of 25 gm. of potassium iodide; 80 gm. of caustic potassa dissolved in water are added to the solution, and the whole is diluted to 1,000 c.c. When using this reagent, 40 c.c. corresponding to 0.72 gm. HgI_2, are heated in a capsule to boiling, and the sugar solution is gradually added to it from a burette. It is best to make several determinations, using first, about 5 c.c. at a time; towards the end one c.c., and finally fractions of one c.c.

The value of the mercury solution was ascertained by titration with chemically pure glucose; 40 c.c. of the solution, which contain 0.72 gm. HgI_2, correspond to 0.15 gm. grape sugar. The advantages of this method consist in the easy preparation and durability of the solution, and the sharpness of the end-reaction, and finally another point, which requires some previous explanation.

It is well known that Fehling's solution reacts similarly with dextrose, levulose, and inverted sugar.* But since cases are known to occur, in which levulose and dextrose exhibit a different behavior towards oxidizing agents, the equality of the behavior of metallic salts towards these varieties of sugar cannot be assumed à priori to be the same under all circumstances, but must be demonstrated in each separate case. In the present instance it was ascertained that the behavior of the alkaline mercuric iodide solution towards inverted sugar differs altogether from that exhibited towards dextrose. While 40 c.c. of the solution correspond to 0.15 gm. of dextrose or glucose as stated above, the same quantity corresponds to only 0.1072 gm. of inverted sugar. This fact makes it possible to determine in a liquid not only the quantity but also the quality of the sugar; that is, to distinguish glucose from inverted sugar. For this purpose two determinations are necessary: in the first place, it must be ascertained how many c.c. of the saccharine solution are required to reduce 40 c.c. of the mercury solution; second, it must be determined, by means of Fehling's solution, how much sugar ($C_6H_{12}O_6$) is contained altogether in the same volume of saccharine liquid as has been used in the first trial. From both of these determinations two equations may be constructed in which the two desired values, glucose and inverted sugar, occur, and may be obtained in the usual manner. It will also be possible to ascertain whether a body contained in a liquid, and which does not directly reduce metallic oxides, is cane-sugar or dextrin. In the latter case the sugar must be inverted by means of an acid, and both of the just mentioned values must be determined. If inverted sugar is found, cane-sugar may be concluded to have been present originally; if glucose is found, dextrin was probably present.—*Zeitsch. f. anal. Chem.*, 1877, p. 121.

On the Purification of Zinc Sulphate.

Prof. Fr. Stolba recommends to deprive commercial zinc sulphate of the accompanying iron and manganese by the following method, which has been practically tested with great success. The impure salt is dissolved in 2 or 3 parts of distilled water, and heated in a porcelain capsule to the boiling point. Meanwhile, pure carbonate of zinc is rubbed with water to a fine thin milk, using about 1 part of the carbonate for every 100 parts of sulphate to be purified. Enough of this latter mixture is now added to the boiling solution of the sulphate to produce a milky opalescence, and a dilute solution of zinc permanganate is added in drops, under constant stirring, until the liquid shows a faintly red color, owing to an excess of the permanganate. To distinguish this point, it is best to interrupt the boiling and to allow the brownish precipitate of manganic oxide to settle. As soon as the tint of the permanganate is observed to remain, the liquid is again raised to boiling, and a further small quantity of carbonate of zinc is added, after which the color of the liquid is again examined. Should the reddish tint disappear rapidly, a further addition of permanganate is necessary, and in this manner both salts must be added in small quantities alternately, until, even after five minutes' boiling, the reddish tint remains, indicating that all oxides of iron and manganese have been precipitated.

The solution now still contains a small excess of zinc permanganate. This may be removed either by protracted boiling of the solution, in which case the water must from time to time be replaced, and milk of zinc carbonate may advantageously be added; or by adding to the solution a

* *Dextrose*, $C_6H_{12}O_6$, also called dextro-glucose, or simply glucose, turns a ray of polarized light to the right; *Levulose*, which has the same composition as dextrose, differs from the latter by turning a ray of polarized light to the left. A mixture of both these sugars in equivalent proportions occurs in many fruits, and is called fruit-sugar or ***inverted sugar***; this is laevogyre, as the rotary power of levulose exceeds that of dextrose.

small quantity of the original impure sulphate, *just enough to discolor* the liquid. The liquid is now allowed to deposit, the clear portion filtered through *pure* filtering paper, and the sediment put on the filter last, to avoid closing the pores of the paper. Ordinary filtering paper is inadmissible, as zinc sulphate has a great tendency to carry with it coloring matters. Since the filtrate contains a small quantity of basic sulphate, which would separate on cooling, a few drops of concentrated sulphuric acid are placed into the vessel intended to receive the filtrate. The latter is evaporated until a pellicle forms, and set aside to crystallize. The mother-lye, on further concentration, yields a fresh crop of crystals.

In case a small percentage of potassa should not be objectionable in the resulting product, potassium permanganate may be employed instead of the zinc salts.

Zinc permanganate is prepared by the action of silico-fluoride of zinc * upon potassium permanganate. Equal parts of the two salts are weighed, and the potassium salt dissolved in just sufficient hot water. To this solution is added, under constant stirring, the crystalline zinc salt, until all crystals have disappeared, and the mixture is then set aside to cool. The clear liquid is afterwards carefully decanted from the sediment, which consists of potassium silico-fluoride, and kept in glass-stoppered bottles. For use it is diluted with five to ten parts of water.

Should the commercial zinc sulphate be *very impure*, it is better to recrystallize it once or twice, before employing the above described method of purification. It is also highly important to insure the absence of organic impurities, which may be attained either by filtration of the solution, or by a gentle ignition of the commercial salt. It should also be remarked that salts of cobalt or nickel cannot be removed by this method; but on protracted boiling of the solution with a piece of *bright zinc*, metallic cobalt and nickel are precipitated.—*Zeitsch. d. Oest. Ap. V.*, 1876, p. 555.

* The author promises shortly to furnish more detailed information on the preparation and properties of this compound.

Detection of the Artificial Coloring of Wines.

THE practice of coloring wines by artificial means is so largely on the increase in France, that tests for the detection of this form of sophistication are becoming essential to the knowledge of the analyst. It is to be hoped that, in view of the increased difficulty of procuring sound wines from European sources, the producers of domestic wines will use every effort to insure their own wares reaching the consumer without having undergone any tampering either on the part of their agents or the retail dealers. The *Chemical News* gives, from a French source, a synopsis of a report by MM. Ballard, Pasteur, and Wurtz, on the methods of determining the nature of the coloring matter used, which reads as follows: To detect indigo, which is often used in the shape of sulphate, the authors add a little sulphate of potassa, and precipitate with chloride of barium. The sulphate of baryta, after filtration and washing, appears white if the wine is free from indigo, but if that dye is present it is a decided blue tint. Magenta is probably never employed alone in the fraudulent coloration of wines, but along with indigo it can be made to produce vinous reds. To detect this dangerous impurity, the authors agitate the suspected wine with a small quantity of amylic alcohol. This withdraws the dye, and collects upon the surface of the wine, where it forms a bright red stratum. If this rose-colored liquor is treated with a small piece of clean white silk, not mordanted, the latter takes the well-known shade of magenta, which turns yellow if the silk is touched with a drop of hydrochloric acid. An appendix by Dr. Stierlin gives a tabular view of the behavior of different reagents with wines colored with dyes, as compared with pure red wine.

M. Ritter, Professor of the Faculty of Medicine at Nancy, has recently published a pamphlet on this subject.* "The dealers," he says, "pretend that fuchsine prevents the weak wines from turning sour, renders them transportable, and enables them to keep. This M. Ritter denies, having proved by analysis that the fuchsine wines deteriorate easily, and the adulteration is only a fraud. The fraud is carried on for three objects: 1. To pass off the common wines made with the Aramon grape, for the mountain wines; 2. Masking the wines to which alcohol and water have been added; 3. Altering the appearance of those which are too alcoholic, and have hence been diluted with water. M. Ritter points out several modes of detecting the adulteration—that which he adopts being Falière's process modified, which is as follows: Five or six grammes of the suspected wine are placed into an ordinary flask of thirty grammes capacity. Eight or ten drops of ammonia are added, and the flask filled three parts full with ordinary ether. It is then shaken up, and left to settle three or four minutes. A part of this ether is then decanted into another flask, and acetic acid added to acid reaction. If the wine contains fuchsine, an aqueous deposit, more or less rose-colored, will be noticed. The fuchsine is transformed into rosaniline, which the ether separates; the acetic acid changes anew the rosaniline into a colored salt, which falls to the bottom.

While we are on this subject, we will add one more test for the presence of artificial coloring matter, which is credited to M. Lamattina.

Mix three and a half fluid ounces of the suspected wine with half an ounce of the peroxide of manganese coarsely pulverized, shake the mixture for ten or fifteen minutes, and filter through a double filter. If the wine is pure, it passes colorless; if colored artificially, it keeps its color. When

* Des Vins Colorés par Fuchsine, et des Moyens employés pour les reconnaitre, pp. 33.

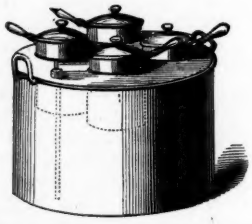
pure peroxide of manganese is employed, this process is applicable to all coloring substances artificially introduced, even fuchsine. When, however, the wine after filtration appears yellowish, it is because the oxide employed contains iron. In such case it is necessary to employ alcohol, acetic acid, and ammonia, in order to determine the presence of fuchsine.

The test of M. Fordos is as follows: Ten c.c. of the wine are put into a test-tube with ten drops or one c.c. of pure ammonia, and briskly shaken for some seconds. Five to ten c.c. of chloroform are then added and mixed with the wine by putting the finger over the end of the tube and reversing it several times, care being taken not to shake it, so that the chloroform may separate readily afterwards. The contents of the tube are then poured into a funnel provided with a stopcock, and as soon as the chloroform has sunk to the bottom, it is run off into a porcelain capsule, which is placed in a sand-bath. A slip of white silken stuff is laid in the chloroform, and heat is applied. The chloroform volatilizes, and, if fuchsine is present, leaves a rose stain on the silk. Towards the conclusion of the operation a little water should be added, and the heat continued. The color is thus fixed on the silk, the shade being more intense as the proportion of fuchsine is larger. If the wine be pure, there is no rose coloration. By concentrating the wine first, and using a very small piece of silk, the presence of very minute, almost infinitesimal, quantities of fuchsine may thus be detected.

The process would probably serve as well as an approximate quantitative test. For this purpose a color-scale should be composed of pieces of white silk of equal size, taken off the same piece, and treated with wine of known composition, mixed with different proportions of fuchsine.

On a Useful Form of Water-bath.

THE water-bath is an indispensable appliance of every laboratory, and should not be wanting in any pharmacy. According to the kind of work it is intended for, or according to the whim and taste of the owner, it may vary in size, shape or material; but one of the most generally useful forms, at least for the pharmacist, is that which is represented in the annexed cut, as it may serve



for a variety of purposes. Of course it may be constructed of any size desirable. The outer pan should be made of tolerably strong copper; the top is provided with a number of holes to receive either infusion-pots, capsules, or flasks, and a small aperture is intended for the insertion of a thermometer. The top may be made so as to be removable, to be replaced by a set of concentric rings, made of strong copper, and intended to support larger sized capsules or evaporating dishes. Although not necessary, a water-gauge may advantageously be attached to it. The bottom, which should be made of strong copper, must not be soldered on with common solder, but must be brazed on, for obvious reasons.

On the Purity of Chloral Hydrate.

A FEW months ago some French and English journals contained complaints about certain impurities in commercial chloral hydrate. One of these complaints referred to the supposed presence of free hydrochloric acid, which was said to contaminate it, "because white fumes became visible on approaching to it a glass rod moistened with ammonia." Mr. C. Anneessens criticises this statement, and maintains, very correctly, that such a test is no proof of the presence of hydrochloric acid. Indeed, perfectly pure chloral hydrate, at any but very low temperatures, always fumes when brought near ammonia, and the presence of hydrochloric acid can only be demonstrated by means of silver nitrate. The white cloud which is formed from the fumes of ammonia and the volatilized vapor of chloral hydrate, is due to the formation of ammonium formiate. This may easily be proved by absorbing the vapor of chloral with a piece of blotting-paper saturated with ammonia; an abundant white cloud is produced. The paper is washed with distilled water, the excess of ammonia is evaporated, solution of silver nitrate is added, and the whole heated. The mixture immediately becomes cloudy, then blackens, and deposits upon the sides and bottom of the vessel a fine mirror of metallic silver.

It is, however, possible that hydrochloric acid be present; in this case silver nitrate will give the characteristic precipitate. But the following reaction may be used in confirmation: Add to the solution of chloral a solution of sodium sulphide. If the chloral was pure, the mixture turns yellow, then becomes cloudy, and gradually darker in color, changing to rose or brick red, according to the quantities of the ingredients, but always to the last named tint if heated. If the chloral was contaminated with hydrochloric acid, however, the same reagent, under the same circumstances, produces a deposit of sulphur, and a disengagement of sulphuretted hydrogen.

Chloral hydrate is volatile at ordinary temperatures, like iodine and camphor. It may be considered pure if it has no acid [or, at least, only a very faintly acid] reaction upon moistened litmus paper, does not stain paper, is not affected by silver nitrate, gives off no reddish vapors with nitric acid, and yields 72.2 per cent. of chloroform when decomposed by caustic potassa.—*Journ. de Pharm. d'Anvers*, 1877, 1.

On a Copper-Salt which explodes with Potassium Chlorate.

If a solution of cupric sulphate be mixed with a solution of sodium hyposulphite until the former is entirely decolorized, the resulting liquid contains cuprous tetrathionate kept in solution by an excess of sodium hyposulphite, and sodium sulphate:

$$2NaS_2O_3 + CuSO_4 + xNaS_2O_3 = Na_2SO_4 + CuS_4O_6 + x\,Na\,S_2O_3.$$

On adding this solution to an aqueous solution of ammonio-sulphate of copper (prepared by adding ammonia to a solution of copper sulphate until the blue precipitate is just redissolved), the blue liquid after some time separates a salt in violet crystals, which, when mixed with potassium chlorate, explodes under production of sparks.—*Arch. d. Pharm.* fr. *Polyt. Notizbl.*

Silicotungstic Acid as Reagent for Alkaloids.

Dr. Rich. Godeffroy has ascertained the fact that silicotungstic acid is probably the most delicate reagent for alkaloids, nearly all of which, even in highly dilute, neutral, or faintly acid solutions, yield a precipitate with an aqueous solution of this acid. The sensitiveness of the reaction was tested by experimenting with the hydrochlorates of quinia, cinchonia, and atropia, with the following results:

An aqueous solution of quinia hydrochlorate gave, with a few drops of an aqueous solution of silicotungstic acid, a distinct precipitate, even in dilutions containing only 0.004 per cent. of the alkaloidal salt. Opalescence could be still observed in presence of only 0.002 per cent., corresponding to $\frac{1}{50000}$ of quinia hydrochlorate.

A solution of cinchonia hydrochlorate was rendered cloudy in presence of only 0.0005 per cent., or $\frac{1}{200000}$ of the alkaloidal salt.

A solution of morphia hydrochlorate was made opalescent in presence of 0.0065 per cent., or $\frac{1}{15385}$ of the salt.

None of the known alkaloidal precipitants, such as platinic chloride, potassium iodohydrargyrate, iodised potassium iodide, etc., show any reaction in such high dilutions.

The precipitates produced by silicotungstic acid are soluble with more or less difficulty in concentrated hydrochloric acid; they are decomposed by solution of caustic potassa, which causes the separation of the alkaloids and the formation of an easily soluble potassium silicotungstate. On shaking the precipitates with caustic ammonia, they are at first dissolved to a clear solution, which, however, soon becomes cloudy from separation of silica. Ignition of the precipitates leaves behind an insoluble mixture of silica and tungstic anhydride (anhydrous tungstic acid).

Silicotungstic acid is best prepared by boiling sodium tungstate with freshly precipitated gelatinous silica. To the resulting solution is added solution of mercurous nitrate, which causes a precipitate of yellow mercurous silicotungstate, which is well washed with water upon a filter, and decomposed by an equivalent quantity of hydrochloric acid. Silicotungstic acid goes into solution, and mercurous chloride (calomel) remains behind. The clear filtrate is evaporated, to drive off the excess of hydrochloric acid, and furnishes, on spontaneous evaporation, large, shining, colorless octaëders of silicotungstic acid, which effloresce in the air, melt at 36° C., and are easily soluble in water or alcohol. We are therefore enabled to precipitate the alkaloids even in alcoholic solution, by using a similar solution of the acid. Marignac has found that this acid does not produce insoluble or difficultly soluble precipitates with any metallic salt, and Godeffroy adds that only cæsium and rubidium salts—but both even in very dilute solutions—are precipitated by it, and that it produces in a neutral solution of ammonium chloride a white precipitate, which is very difficultly soluble in large quantities of water. —*From Arch. d. Pharm.*, Nov.

On the Preservation of Ergot.

Prof. Dragendorff thinks that the proneness of ergot to spoil by keeping is due to the oxidation of the oil or fat so abundantly contained therein. The active principle of ergot, which, according to his investigations, is a nitrogenized organic acid united with lime, is considered by him as by no means unstable. Powdering the ergot causes the free exposure of the fat, which naturally abstracts oxygen, and becomes rancid. This oxidation, however, is preceded by ozonization, and care must be taken to prevent the ozone from attacking the active principle. Hirschberg, some years ago, suspected that the gradual oxidation of the fat was the primary cause of the deterioration of ergot. Prof. Dragendorff thinks that by depriving ergot of its fat immediately after powdering, and again drying, the resulting powder would retain its activity for a long time.—*Jahresb. f. Pharm.*

A New Mode of Generating Sulphurous Acid for Use as a Disinfectant.

Mr. Thomas W. Keates suggests the use of bisulphide of carbon as a material from which to evolve sulphurous acid. This substance is, as is known, quite volatile and inflammable [it is explosive when ignited in quantities]. It contains a large proportion (84 per cent.) of sulphur, and when mixed with kerosene and burned in an ordinary lamp, will evolve such an amount of sulphurous acid vapor as to disinfect a moderate apartment very rapidly. The method of employing the lamp is described by Mr. Keates, who has devised some peculiar sort of lamp for using the bisulphide of carbon more advantageously. An ordinary lamp is all that is necessary. [? Ed. N. R.] It should be said that although the smell of bisulphide of carbon, when impure, is most nauseating, yet a pure article is now manufactured, having little or no odor.

THERAPEUTICS.

Alcohol as a Food.

At the Eleventh General Meeting of the American Social Science Association at Saratoga, in September, Dr. Edes presented a paper upon The Uses of Alcohol, of which the following summary is a good statement of its food value :

I. Under some circumstances alcohol may be a food. These are :

(*a*) Deprivation of nourishing and sufficiently varied and abundant rations, as in the case of soldiers, sailors, laborers, etc.

(*b*) Where, for any reason, ordinary food is not well assimilated, or the system has become habituated to alcohol, as in some rare instances of habitual topers, and in some wasting diseases.

This substitution should be a matter of necessity, and not of choice.

II. The healthy man, with a full and varied supply of food, needs absolutely no alcohol. Wine with food sometimes assists digestion, but the digestion which needs the aid is either enfeebled or overburdened. The most severe and long continued labor can be carried on better without alcohol than with it. This is, in most cases, especially true of mental labor.

III. In the few cases in which this is not true, and where a small quantity of alcohol suffices merely to restore the normal vigor without excitement, the previous condition is probably one of somewhat impaired vitality, perhaps more especially affecting the heart. As an addition to a diet already sufficient, alcohol is, to say the least, useless in perfect health.

IV. An occasional use of light wine or beer is a luxury and not a necessity. Experience shows that such a use cannot be regarded as seriously detrimental either to bodily or to mental vigor.

V. After a fatiguing day's work, as a relaxation and agreeable change, or as a prelude and assistance to the digestion of more appropriate food, alcohol may be looked upon as approaching more nearly to a true stimulant or restorative action, than under any other circumstances in health. We thus expect from it neither intoxication nor reaction.

VI. An habitual overdose of alcohol leads to degeneration of important organs, and undermines the vital powers.

VII. There may be more reasons for total abstinence entirely distinct from the physiological.

VIII. The introduction of the use of light wine and beer, though not desirable in a community already in a state of ideal physical and moral perfection, is highly desirable as a substitute for stronger liquors.

The Treatment of Diarrhœa in Hot Countries by the Sugar of Milk.

Dr. Talmy prescribes for the diarrhœa of hot countries, from 20 to 300 grammes of sugar of milk daily. He administers it in the simplest way : the sugar, dissolved in a little water or as a syrup, may be partly taken at each meal, or as a draught in the course of the day. An excellent mode of administration consists in putting the dose of sugar of milk to be taken, into half a litre or two litres of milk, according to the habits and the digestive capacities of the patient. The treatment is spread over several months, diminishing the dose as nutrition becomes more considerable and easier. According to M. Talmy's little work (published by Coccoz, Paris), the endemic diarrhœa of hot climates is the result of a functional lesion of the liver, which results in the diminution and even the suppression of the glycogenic function of the liver. The sugar of milk may thus replace the glucose which is wanting in the blood.

Hypodermic Use of Iron.

Huguenin administers iron hypodermically in cases of pernicious anæmia, when the alimentary canal refuses to perform its functions. He uses a solution prepared from 5 gm. each of pyrophosphate of iron and ammonium sulphate, in 50 gm. of distilled water, and administers a quantity corresponding to 0.03 gm. (or 0.46 grains) of iron at a time. Very soon after the injection the skin becomes red, œdema and palpitation of the heart are observed ; but all these symptoms soon vanish, and generally an improvement is noticeable.—*Gaz. des Hôp.* in *Ph. Z. f. Russl.*

Antihydropin.

Dr. Bogamolow some time ago discovered in cockroaches (*Blatta orientalis*, Orthoptera) a crystalline substance, which he named antihydropin, from the favorable effects obtained by him with it in the treatment of dropsy. Roaches are highly esteemed as a popular diuretic by the common people in Russia ; this fact induced Dr. B. to employ them in various forms, such as decoction, tincture, and powder, and in the form of the supposed alkaloid. Under its use the amount of urine increases, albumen and casts diminish in quantity ; œdema of hands, feet, and face subsides, the weight of the body increases, and the pores of the skin begin to act more freely. The remedy is said not to interfere with digestion, nor to irritate the kidneys.—*Petersb. Med. Woch.* in *Ph. Z. f. Russl.*

The Iodides in Lead-Poisoning.

At a meeting of the Academy of Medicine of Paris, Dr. Faure communicated a note on the efficaciousness of the iodides in lead-poisoning. These observations had been made by the writer in a white-lead factory, his own property. He made the experiment on himself after a very prolonged period of poisoning, and a partial cure by the usual remedies ; he obtained excellent results by a treatment of iodide of potassium, administered in doses of two centigrammes. After that time, and notwithstanding an excessive sensitiveness to saturnine emanations, he had always successfully overcome frequently repeated poisoning.

M. Faure was of opinion that a workman sufficiently intelligent to determine the quantities he ought to take, would always obtain the most satisfactory results by a treatment consisting of doses from five to ten centigrammes of iodide of iron or potassium, without being obliged to interrupt his work.

Juncus Acutus in Ascites.

THE list of diuretics employed in this complication is not small; but it would appear that a French surgeon, residing in Algeria, has been very successful with *Juncus acutus L.* About twenty stems should be subjected to decoction, both the white and green parts being used. It may be mentioned that M. Cazin has found similar properties in an indigenous plant (the *Butomus umbellatus L.*). One ounce of the reed is to be boiled in a quart of water.

Sulpho-Carbolate of Sodium in Diphtheria.

BY W. E. ANTHONY, M.D.,
of Providence, R. I.

THE object of this paper is not to give the clinical history of diphtheria, but to call attention to a remedy which, in the hands of those who have had experience in its use, has proved a great benefit in the treatment of this disease. I refer to the sulpho-carbolate of sodium. My attention was first called to it by a paper, read before the Rhode Island Medical Society, by Dr. C. H. Fisher, in 1875, in which he detailed his experience in its use and the formula for its preparation. I have notes of eighteen cases of true diphtheria, occurring within the past three months, in which I have used the remedy with satisfactory results in all but one case. The fatal case occurred December 11th, and was that of a delicate child, three years of age, the disease proving rapidly fatal in thirty-six hours from the time of invasion. While I do not consider the sulpho-carbolate a specific in this disease, I do think that its judicious and persistent use will, in many cases, be followed by an amelioration of its symptoms.

Just what its mode of action is I am not fully prepared to say. It is possible that it acts as an antidote and eliminative to the peculiar blood poison which is the cause of the disease. It is a stable salt, parting with its acid only when brought in contact with the fluids of the body. In one case, where a large quantity had been used for several days, the odor of carbolic acid was plainly perceptible in the urine. The remedy may be used in every form and stage of the disease, in doses of from one to ten grains, repeated every one, two, three, or four hours, according to the necessities of the case. The proportion of acid in the salt is about one-fourth, which will determine the dose.

I have given as high as one hundred and twenty grains in twenty-four hours, to a child seven years old. It may be combined with quinia sulph., tinct. ferri mur., ammonia carb., or given in brandy, whiskey, wine, syrup, or any aromatic water.

A very good way to dispense it to children is to mix it with sugar and let them eat it. For adults I sometimes use the "cachet de pain." My rule is to begin the administration of the remedy as soon as the disease is recognized, and to continue it in increasing doses until its effects upon the disease is manifest, then gradually to diminish the dose and increase the intervals between the doses.

In addition to the use of the sulpho-carbolate, I always use tonics and stimulants freely, and nourishment, in a concentrated form, such as beef extract, cream, etc.

The local treatment is directed to the removal of the false membrane and the reduction of the local inflammation. This result is obtained, first, by hastening the natural progress of exfoliation; second, by the use of such remedies as will destroy the micrococci and dissolve the pseudo-membrane. —*Medical and Surgical Reporter.*

Phosphide of Zinc.

THE phosphide of zinc has so far proven a most efficient agent in the successful treatment of the major part of a certain class of affections. In very many instances it has been far more curative than phosphorus. Considered in the light of a curative agent the phosphide of zinc stands alone, not only for the certainty but for the rapidity of its action as a nervous tonic and stimulant. Its value in these respects has of late been fairly tested in the last and exhausting stages of typhoid and other fevers, where the nervous energies have been so far prostrated as to render convalescence, if not doubtful, at least tedious and protracted. The great therapeutic value of the phosphide of zinc is evinced in the most distinct manner, when used in the treatment of neuralgia. While the phosphorus is seldom curative in doses less than one-twentieth of a grain, often calling for as much as one-tenth or one-fourth, the phosphide of zinc yields as reliable and more speedy results in doses of one-tenth to one-eighth of a grain. But few stomachs can tolerate more than one-thirtieth of a grain of phosphorus before manifesting symptoms of irritation, which, in connection with the "matchy" taste soon evolved in eructations often engenders a disgust to its further continuance. Nor are these disagreeable features altogether abolished by any of the multitudinous formulæ now in vogue. On the other hand, experience with the phosphide of zinc has proven that it enters the circulation far more rapidly than the element, and when administered in doses of from one-eighth to one-twelfth of a grain, it produces its curative influence far more readily, and is equally as permanent in therapeutic power. It has been found to be extremely serviceable in neuralgia in doses of one-eighth of a grain in the form of a pill in angina, in loss of memory, and impotence, in loss of sleep from continued mental anxiety, and generally in those nervous affections that owe their origin to exhaustion and depression of the nerve force. Dr. Hammond's formula is one-sixteenth of a grain of phosphide of zinc, with one-fourth of a grain of extract of nux-vomica made into a pill.

RECENT PAPERS.

Journal of the Chemical Society.

November, December. J. GALLEY BLACKLEY: "On a New and Convenient Form of Ureometer for Clinical Use. (See next number.)

THOS. ANDERSON (the late): "Educts from Baphia Nitida (Barwood or Camwood"). [This dye-wood contains a crystallizable neutral principle, baphiin, soluble in alcohol and ether, and having the odor of orris-root. If baphiin be boiled with aqueous potassa, the solution filtered, and hydrochloric acid be added to the filtrate, a yellowish white powder falls, which, when collected, dried, and exhausted with anhydrous ether, yields, on evaporation of the ethereal solution, baphic acid. The latter, in ammoniacal solution, instantaneously precipitates metallic silver from the nitrate. It having been stated that the coloring matter of camwood is identical with santonine, the author comes to conclusions which are opposed to this view.]

L'Union Pharmaceutique.

December. DAMBIER: "Preparation of Syrup of Monobromated Camphor." [After various trials the author comes to the conclusion that the best form of exhibition, in a liquid state, is an alcoholic syrup, or elixir, the formula of which will be found on p. 62].

M. LAILLER, chief pharmacist at the Quatre-Mares Asylum, has used cherry-laurel water as a vehicle for morphia exclusively, during a whole year. He asserts that a hypodermic solution prepared with this menstruum keeps better than any other, and does not produce bad results.

Zeitschrift des Oester. Apotheker Vereins. 1876, Nos. 34–36. 1877, No. 1.

FR. STOLBA: "On the Purification of Zinc Sulphate." (See p. 43).

C. HIMLY: "Easy Method of Examining Flour for Adulterations." (See next number).

Répertoire de Pharmacie. 1876, Nos. 22–24.

BATTANDIER: "Presence of an Alkaloid in Heliotropium Europæum." [Ten kilos of heliotrope were boiled with acidulated water, the liquid concentrated, and treated with strong alcohol, which precipitated about one-half of the extractive matter. The alcohol was evaporated, and the extract left from this treated with potassa and ether. The green ethereal solution was mixed with 50 c.c. of dilute sulphuric acid, and the resulting liquid again decomposed with potassa and extracted by ether. The new ethereal solution, on evaporation, deposited a viscous mass, which gradually became crystalline; it is an alkaloid, very bitter, and forms crystallizable salts. The yield was 0.025 per cent.]

R. F. FRISTEDT: "On Balsam of Mecca." [Giving a history of the uses of this product derived from *Balsamodendron* (or *Amyris*) *Gileadense*, L. Mecca balsam or balm of Gilead is still considered a very valuable vulnerary remedy in the East, but is little used at present in regular practice.]

P. VIGIER: "Preparation of Picric Cotton." (See next number).

P. GUYOT: "Note on Two Species of Vegetable Wax." (See next number).

GAUTRELET: "On the Solubility of Salicylic Acid in Ammonium Citrate." [The author finds that the dissolving action which ammonium citrate exerts upon salicylic acid is due to the decomposition of the tri-ammoniacal citrate into one equivalent of a mono-basic citrate, and two equivalents of monobasic salicylates, both salts remaining dissolved in the solution.]

YVON: "A Pocket-Case Uroscope." (See next number).

Berichte der Deutschen Chemischen Gesellschaft. No. 18.

C LIEBERMANN AND M. WALDSTEIN: "Emodin from Rhamnus Frangula Bark." [While attempting to prepare some frangulic acid, which Faust has isolated from the bark and recognized as a derivative of anthracene, the authors found a substance which, after various purifications, was recognized as *emodin*, heretofore only met with (in very small proportion) in rhubarb. According to Merck, who furnished the crude material to the authors, frangula bark contains about 0.2 per cent. of emodin.]

Zeitschrift für analytische Chemie. 1877, No. 1.

P. BERG: "The Quantitative Determination of Boracic Acid by Baryta." (See next number).

A. GAWALOWSKY: "Comparison of Various Filtering Papers in the Market." [All filtering papers of the market contain traces of iron; the Swedish paper of Munktell contains the smallest amount of ash; and Schleicher and Schill's paper has the lightest weight. The following are the names of manufacturers, with the percentage of ash of their paper, and comparative price:

Quality of Paper.	Firm.	Ash, per cent.	Price per 24 Sheets.
Common.....	Alois Kreidel, Prague.....	1.00	27 pf.
"	Unknown, Leipzig..	0.40	57 "
"	Aktienges. Bohemia, Prague	0.90	23 "
" small	Lenoir, Vienna.....	0.70	42 "
" large	(?)	0.80	50 "
"	Schleicher and Schill, Düren	3.30	52 "
Chemic. pure..	do do	0.46	105 "
Swedish.....	Eichmann, Prague.....	0.30	167 "
"	Blaha and Kappus, Prague..	0.26	300 "
"	Munktell, Stockholm.....	0.20	200 "

100 pfennig = $0.238 gold.

Pharmaceutical Journal and Transactions. Nos. 338–343.

WM. INGLIS CLARK: "The Microscopy and Adulterations of Colocynth Powder." [In the course of this paper, to which we shall have occasion to refer hereafter, the author remarks that he has examined about one dozen samples of the commercial powder, and that he has detected starch (which should not be present) in three of them; in one sample as much as 75 per cent.]

WM. INGLIS CLARK: "A Deposit in Solution of Bicarbonate of Soda." [A solution of this salt had been observed to deposit crystalline grains, which on analysis proved to be calcium carbonate. As the sodium bicarbonate was free from lime, and as some diatoms were found intermingled with the crystals, the conclusion was drawn that the lime was carried in by the water (Edinburgh). Such proved to be the case; but it was ascertained that pure bicarbonate, free from carbonate of soda, caused no deposit. The latter salt therefore reacts with the lime in the water to produce a deposit.]

W. DYMOCK: "Notes on Indian Drugs." [*Clerodendron serratum*, local Bharangi Mul. Bark is bitter and considered tonic and antiperiodic.—*Symplocos racemosa*, local Lodhra; bark has a faint balsamic odor with slight astringency; it is often used externally made into paste with some adhesive substance, much like our pitch-plaster.—*Achyranthes aspera*, local Aghara. Decoction of the herb is used as a diuretic, and the juice as an application to scorpion stings and to relieve tooth-ache. [This plant is much used by the Hindus as a charm, as medicine, and in sacrificial rites; it is called apâmârga, "the effacer," in Sanskrit.—Ed. N. R.].—*Coix Lachryma*, local Kassai Bij. The silicious involucre of this grass, containing the seed, is sold in the drug shops. It is about the size, and has much the appearance of a small cowrie shell, shining, white, and very hard. At the base is a scar marking the attachment of the peduncle; at the apex an opening, from which, even in the dry state, a portion of the female flower may be seen protruding. Used as a diuretic. [Known as Job's Tears, Lachryma Jobi.—Ed. N.R.].—*Wrightia tinctoria*, local Kala-Koora. Bark of root and stem is bitter and reddens the saliva.—*Eupatorium Ayapana*, local Ayapana; stimulant, expectorant, and bitter tonic.—*Tetranthera Roxburghii*, local Maida Lakri; bark is much used as a demulcent and astringent in affections of the bowels, such as dysentery.—*Taxus baccifera*, local Birmee.—*Flacourtia cataphracta*, local Juggum (tree), Talisputree (drug); leaves have a rhubarb-like odor; used as a stomachic.]

F. A. FLÜCKIGER: "Note on Dikamali Resin." [This substance, the resinous exudation of *Gardenia lucida* Roxb.,

Rubiaceæ, is much used in India, both internally and externally; it contains, according to Stenhouse, a crystallizable resin, described by this chemist "as one of the most beautiful substances of that kind." It has a marked, peculiar odor, somewhat resembling rue and aloes; it looks crystalline and has a yellowish color, being decidedly yellow when powdered; the solution has a fine yellow color with a greenish hue. It assumes an intensely greenish brown color on addition of ferric chloride, and on addition of a little soda it turns brown. It belongs to the *aromatic* class of organic compounds, as it yields, by fusing with caustic potassa, protocatechnic acid.]

Journal de Pharmacie d'Anvers.

January. C. ANNEESSENS: "Observations on the Alterations of Chloral Hydrate." (See p. 45).

Archiv der Pharmacie.

December. A. RIPPING: "On Artificial Cherry-laurel Water." [The great difference in effects of the commercial water led the author to suspect that much of it was prepared artificially; in order to examine the subject, he prepared some himself. From his own experiments he had previously ascertained that each litre of the natural distilled cherry-laurel water contained about three grammes of essential oil. Having prepared some dilute hydrocyanic acid, of the strength required by the Pharmacopœia for cherry-laurel water (1 in 1,000), he added to each litre three grammes of oil of bitter almonds, and obtained a mixture which appeared to be identical with the natural water. To distinguish between the two waters, the process of Mohr for distinguishing between natural and artificial bitter-almond water may be employed, namely: silver nitrate, which produces only a slight opalescence in the natural water, as the hydrocyanic acid is wholly fixed by benzaldehyde, and the opalescence is caused by ammonium cyanide, which is formed during the distillation by the splitting up of the hydrocyanic acid into ammonia and formic acid. The presence of nitrobenzol may be recognized, according to Hager, by shaking the water with chloroform, evaporating the latter, treating the residue with alcohol and water, and then adding zinc, hydrochloric acid, and after a while a small piece of potassium chlorate. If no change of color takes place, the absence of nitrobenzol is proved, as the latter would be converted by nascent hydrogen into anilin, which would be changed to rosanilin by potassium chlorate, and would tinge the alcoholic liquid rose-red.]

Pharmaceutische Zeitung für Russland.—Nos. 22–24.

A. PELTZ: "On Indian Hemp and its Active Principle." (See next number).

A. POEHL: "A Case of Cholesterin in Urine." [This was separated by shaking with ether; the ethereal solution on evaporation left a wax-like mass, which was treated with a hot alcoholic solution of potassa; the mass was evaporated to dryness and extracted with water. By repeated shaking with ether the whole of the cholesterin, amounting to 2.5 per cent. of the urine, was obtained, and finally crystallized from hot alcohol.]

Pharmaceutische Centralhalle. Nos. 46–52.

E. BILTZ: "Campani's Test for Sugar in Urine." [This depends on the characteristic color produced by superimposing a layer of urine upon a very dense layer of a copper solution. The amount of copper must be very minute, and the great density of the solution is produced by a foreign salt. Two methods are proposed:

Heat five or six c.c. of basic lead acetate solution, to which a very small quantity of cupric acetate has been added, to boiling, and allow the urine to flow on top, without permitting the liquids to mingle. In presence of one-half per cent. of sugar a yellow coloration makes its appearance at the point of contact.

Or, add to a concentrated solution of sodium chloride a very small quantity of Fehling's solution—merely enough to show a bluish tint; then boil, and pour the urine carefully on top. The same colors will be developed if sugar is present.]

E. BILTZ: "Detection of Iodic in Nitric Acid." (See next number).

HAGER: "Valerianate of Caffein." [Dr. Hager notices the mention of such a compound in some Dutch journals, and points out that caffein has been shown to be incapable of forming compounds with acids, for which reason the citrate of caffein, which used to be officinal in several pharmacopœias, has been abandoned.]

HAGER: "On the Occurrence of Buxin in Beer." [The author found buxin, or bebeerin, in beer, but states it to be entirely harmless.]

HAGER: "On the Purity of Salicylic Acid." (See next number).

American Journal of Pharmacy.

January. L. WOLFF: "On the Use of Petroleum Benzine in Pharmacy." [From this paper, which suggests a number of new uses of benzine, we select the author's process for preparing purified oleic acid. See next number].

G. W. KENNEDY: "Aquæ Medicatæ." [Pointing out the objections to the use of magnesia in their preparation, as it is well known that a trace of magnesia is held in solution, which will cause the precipitation of alkaloids, if such should be dissolved in the water. The author recommends that the next pharmacopœia should prescribe all aromatic waters to be made by distillation.]

R. V. MATTISON: "Acidum Phosphoricum Dilutum." [Stating that his firm is in the habit of manufacturing the acid as follows: In the yard attached to the laboratory there is placed a tub of twenty-five gallons capacity, into which are put some smooth bricks, and upon them a graphite crucible of about ten gallons capacity. Upon the top of this a funnel is inserted, and carefully luted down at the edges with flaxseed meal, or clay, the necessary amount of amorphous phosphorus being previously put into the crucible. Into the spout of the funnel a glass tube is inserted, reaching to the bottom of the crucible, and at the upper end provided with a small funnel, through which the requisite amount of nitric acid slightly diluted is poured in. The application of heat is accomplished by allowing the waste steam and hot condensed water from the upper floor of the laboratory to pass into the tub, the water surrounding the crucible being thereby constantly kept hot, and the process may be kept going for any length of time.

The author recommends also the following method as very simple, and specially adapted for the pharmacist:

Take of Phosphorus (amorphous).....370 grs.
Nitric Acid.....5 troy oz. or q. s.
Water, sufficient.

Add the nitric acid to eight fluid ounces of water in a porcelain capsule, and to this add the amorphous phosphorus; raise the temperature of the mixture to boiling, and evaporate until the solution has lost the odor of nitric acid. Then dilute to twenty fluid ounces, or to the requisite spec. grav. with water, any impurities having previously been removed.]

H. G. DEBRUNNER: "Dangerous Candy." [Reporting to have found candies wrapped in fancy paper, which on analysis proved to be colored with Paris green, one paper containing as much as one-half grain of arsenious acid and one-third grain of cupric oxide.]

Pharmaceutische Zeitung. Nos. 100–104. 1–4.

H.: "Distinctive Tests for Carbolic and Salicylic Acid." (See next number.)

DR. SCHACHT: "On the Composition of Sodium and Zinc Salicylates." [The sodium salt, as prepared by E. Schering, corresponds to the formula $2(C_7H_5NaO_3)+H_2O$, contains 13.60 per cent. of sodium and crystallizes in laminæ. The zinc salt corresponds to the formula $C_7H_5ZnO_3+H_2O$, contains 17.34 per cent. of zinc, and crystallizes in well-developed needles.]

SAME: "On Chemically Pure Glucose." [Slight modification of Schwartz's process.* To 1 litre of 80 per cent. cold alcohol, containing 40 c. c. of fuming hydrochloric acid, 590 grammes of finely powdered cane-sugar are gradually added. The syrupy liquid turns yellowish, and after standing for about eight days in a cool place, becomes semi-crystalline. The liquid portion is poured off and the crystals transferred to a filter, where they are washed with alcohol

* NEW REMEDIES, V., 169.

of 0.830 specific gravity, until the filtrate is *entirely indifferent* towards litmus. This can be accomplished only by removing the crystals from time to time, rubbing them with the alcohol in a mortar, and again bringing on the filter. Finally the crystals are put on blotting-paper, dried in the air, and recrystallized from *boiling absolute* alcohol, most of which may be recovered by distillation.]

ORIGINAL COMMUNICATIONS.

THE METRIC SYSTEM.

THE late action of the Medical Society of the County of New York, in recommending to its members the adoption of the Metric System in writing prescriptions, is one of those efforts which are made spasmodically to shake off the yoke of antiquated customs and institutions which have outlived their usefulness. It is not by any means the first effort of the kind in this country, and some time may possibly elapse before it will be entirely successful; but that it eventually will prevail, we think there can be hardly any doubt. And even if it should be found advisable to defer for a time the *general* adoption of the system, it will, and should make its way into every branch of science, which deals with exact facts.

Among the objections which have been raised against the introduction of the metric system, there are many which are apparently important, some of which have already been satisfactorily answered, while others have perhaps only been alluded to in the late discussions and printed papers. But it is unwise to look only upon the side of the advantages; if there *are* valid objections, they should not be passed over in silence, particularly at this stage: they would have to be encountered some time or other, and if they cannot be successfully answered now, the adoption of the system at this period would be injudicious.

In discussing some of these objections we wish it to be understood that we do not intend, at least for the present, to insist upon the universal adoption of the system, but that we merely wish to see it adopted by physicians and pharmacists. But here we are already met by the objection, that "it is unwise to introduce the system into a special branch of business, before it has become universal." Some retailers or dispensers contend that they should not be made to calculate the value of their goods into the metric system, as long as they are compelled to purchase by avoirdupois. This is a very small hardship indeed, and requires the exercise of but little arithmetical calculation. Besides, if the system is once adopted, a large number of chemicals and pharmaceuticals, which are only made use of in prescriptions, will probably be put up by wholesale and manufacturing houses, in metric quantities, and the importer could order his foreign goods in the same system, which would be quite an accommodation to the exporting chemists and druggists of Continental Europe, as they would be saved the trouble of putting up special packages for the American market. We are well aware that—in absence of a general use of the system—the labor of transcalculation from metric to common weights and measures will fall upon somebody, and this somebody will generally be that person who occupies the threshold between trade and science; he is not only the most proper, but is generally also, or at least ought to be, the most capable person for this task. And the apothecary is certainly one of those who may be said to stand upon this boundary line.

One of the most common objections may be modulated in this way: "We are well accustomed to our present system, and do not want to be bothered with a change; nor do physicians want it; and if they did, we both would be liable to make mistakes." This argument in fact lies at the background of many other objections, and does not generally crop out until the adversary has been vanquished in every other point, and been driven to the wall. It is quite true, that many do not want a change; why should they be annoyed with new-fangled ideas, when the world would roll along smoothly and they with it, while sticking to the old fashion? They love their ease, and want to be left alone; "when they are gone, then people may do as they like." With this class of men, which is fortunately not very large, counter-arguments are useless; they must be left to their fate. As to the mistakes liable to be made by either the physician or apothecary, we do not see why they should be of more frequent occurrence in this country, than where the system has been introduced by compulsory laws. Surely the members of either profession would not wish to bestow upon themselves such a testimonium paupertatis as this, to acknowledge their inability of mastering a few simple figures. On the contrary, we firmly believe that the very newness of the thing will cause a much greater degree of care than usual on the part of the physician as well as the apothecary, and no prescription is likely to leave the store of the latter before it has been thoroughly scrutinized.

Another argument may be raised in this manner: "It is unwise to adopt the metric system in the preparation of prescriptions, as long as galenical preparations are not prepared by weight exclusively."

This is one of the weightiest objections yet offered, and in order to explain it more clearly, we will dwell upon it somewhat more in detail. Our tinctures, fluid extracts, syrups, etc., are prepared from a certain *weight* of the drug which is made up into a certain *measure;* for instance, 16 *troy* ounces of digitalis are made into 16 *fluid* ounces of fluid extract; now we know that nearly all manufacturers differ somewhat in their processes or in the kind of menstruum they employ, although their products may be equally reliable. One may use glycerine, another may not. The 16 fl. oz. of one maker's product may therefore, in certain cases, weigh one-fifth or one-fourth more than 16 fl. oz. made by another. Now, while this difference in weight is of no account, as long as the preparations are dispensed by measure, it may make some difference if dispensed by weight. Supposing two grammes of fluid extract of veratrum viride had been ordered, it is not at all unlikely that 2 grammes of one maker's product would measure say 40 minims, while the same weight of somebody else's manufacture might perhaps measure 30 minims, representing therefore a different number of grains of veratrum viride. If however, each maker had prepared his fluid extract—irrespective of the kind of menstruum—so that 16 *troy* ounces of the drug had been made into 16 *troy* ounces of the finished preparation, any difference in measure or bulk would be immaterial. The next U. S. Pharmacopœia will doubtlessly direct all preparations to be made in this manner, and will exclude measures entirely. The small error, however, which is caused by such a discrepancy between weight and percentage of active constituents, is nearly balanced by the manner of administration, which is generally effected by the ordinary domestic measures. It might be said here, that two wrongs do not make a right, but—there is no rule without exceptions; and we are inclined to think that this small drawback may be easily overcome, although perfect exactness will never be reached until the officinal preparations are all made by weight.

Let us once more recur to the first-mentioned objection, which is occasionally brought forward in a different version, thus: "It is unwise to force the metric system upon a portion of the community before its *adaptability* to the wants of the whole people has been demonstrated, and its general introduction been *finally settled upon*." In place of long arguments we may ask: Why has it been universally adopted by scientists throughout the world? Were they compelled to use it, or did they wait until it had become universally adopted? and does not the physician as well as the pharmaceutist aim to establish and to build upon scientific truths based upon exact determinations of time, space, weight, temperature, etc.? What system better than the metric could be devised for such a purpose? Or is there a lurking thought behind, that perhaps the metric system will again be abandoned by those nations who have already adopted it? We are perfectly well aware that it is not absolutely free from errors; indeed, the fundamental terrestrial measure—the distance from pole to equator measured upon a great circle—has not yet been determined with the ut-

most attainable degree of accuracy. But absolute exactness is unachievable, no matter what base-line may be adopted as starting point. The original idea of a fundamental measure, which might be accessible to civilized man at any time and under all circumstances, has during the last few years been reduced to the preparation and adoption of a number of exact standard-metres, all made with the utmost possible care from a uniform and homogeneous mass of iridium-platinum, possessed of equal and known degrees of expansion and contraction, and intended to be deposited at the various government-centres. It is therefore neither likely that the standard (metre) will ever be lost, or that it will be replaced by another, different, system. The apparent drawback which is heralded forth by a number of prominent men, that the system is not adaptable to the wants or the understanding of the common people, chiefly owing to its limited divisibility, is an artificial objection which we are sure would soon be found groundless, at least as far as the *understanding* of the people is concerned, although we can readily imagine that in certain trades and arts a change of system would involve a considerable outlay.

Let us profit by the experience of other nations, some of whom have managed to bring about this change in a remarkably short time, without any noticeable disturbance of trade or commerce; and let us be prepared to fall into line when the time comes; perhaps the joint efforts of physician and pharmacist will be found to have formed the entering wedge.

THE BAHAMAS AS A HEALTH-RESORT.

A TRIP combining motives, both of business and pleasure. led us, in the early part of the winter, to visit a group of islands, lying about thirty hours sail to the eastward of Florida, known as the Bahamas. Although it was upon one of these that Columbus first landed, and one might, therefore, infer that, being the oldest known region of America, we would be likely to know all about them, still it is said that there are some of the five hundred islands that compose the group, that have yet to be explored. It is a fact that many intelligent people know so little of them, even in a general way, that they are quite as often confounded with the Bermudas, and located in the southern Atlantic or Pacific oceans, as where they really belong.

To reach the Bahamas is by no means difficult, for during the season a steamer leaves Pier 16, East River, every week, going either direct, or stopping at Savannah on the way, and the traveller has the choice of a trip of five days by sea or a ride in the cars to Savannah, and a shorter voyage of about forty hours from there.

For some persons the first would be advisable, and such can be assured that the steamers of the line are carefully sailed, and well supplied. Both in going and coming, the writer made the trip by sea the whole distance, and the attention and carefulness of the officers was a subject of grateful comment, while the table was rather better than is oftentimes found on board some transatlantic lines. The steamers, to be sure, are smaller than those used to cross the Atlantic ocean, because the shallowness of the water on the bar across the entrance to the harbor of Nassau, prevents larger vessels than 1,000 tons being employed. The lower portion of the route is generally made in smooth water, and the motion is not disagreeable. The trip by way of Savannah has the advantage of being almost entirely limited to the smooth water, so that persons who suffer much from sea-sickness, and do not require the voyage as a part of their treatment, can usually reach the islands without discomfort. When we left the harbor of New York, in November, a north-east gale was blowing, and it was considered good policy to anchor in the Upper Bay until daylight. The two following days were rough, but after getting through the Gulf-stream, and while running down beyond its eastern border, the smooth sea and warm sun were delightful. This was especially the case as we approached the end of our voyage, and when, at last, we reached the harbor of Nassau, warm winter clothing became unendurable, and the naked little darkeys who dove for pennies, were envied the luxury of a plunge in the warm water.

The Bahamas are a British colony, and Nassau, the seat of government, is on the only one of the group which possesses a good harbor. This island (New Providence) is by no means the largest, but is the most thickly settled; by far the largest number of inhabitants being blacks. The length of the group is about six hundred miles, and the distance between them is such that in going from one to another by boat, land is never entirely out of sight. Only a small number are inhabited, and all are flat and often long and narrow. They appear to have originated in a coral formation, and are entirely composed of lime-stone. Some are quite barren, but the larger ones are covered with a close growth of trees, comprising the Madeira, horse-flesh mahogany, mastic, lignumvitæ, pigeon, alum, and various dye-woods, in addition to a dense mass of under-growth, in which varieties of palm and cactus are quite conspicuous. As a whole the vegetation is decidedly tropical in character, and in almost every way differs from that of our States.

Two things in regard to the climate are very conspicuous: the slight variation of temperature, and the moisture of the atmosphere, both being due to the geographical position. Next to the effect which is always exerted upon the climate of islands in the sea, of limiting the range of temperature, the existence of the Gulf-stream is the prime factor in rendering the climate of the Bahamas so singularly mild. Sweeping around the eastern coast of Florida, the Gulf-stream passes between our coast and these islands, and by its warmth is an almost perfect barrier against cold west and north-west winds, such as frequently render the slightly built houses of our Southern States anything but comfortable without extra fires. By the time these winds reach the Bahamas, however, they have been so warmed by the higher temperature of the Gulf-stream and saturated with moisture, that unless the wind continues a gale for several days, it quite loses its biting character.

This was well shown at the time of our visit, for during the week of our stay we were treated to about everything in the way of weather, excepting a hurricane, that the climate could produce. During the latter part of the week a north-west wind blew, and, much to the consternation of the inhabitants, the thermometer sank gradually from about 70°, which is the average during the winter, to 52° Fahr.* On returning to New York we found that the cold here had been intense, and in Florida, on a line nearly due west of the Bahamas, the following condition of affairs was described by a correspondent of the *New York Times:*

"I have found a heavy Ulster overcoat, in addition to thick winter underclothing, exceedingly comfortable. Everybody here is wrapped up in similar style, and blazing wood fires are heaped on every hearth. Ice two inches thick has been found in vessels on the St. John's steam-boats two hundred miles south of this place, and I met a man to-day who told me he made a cocktail this morning from ice that formed in the wash basin in his bed-room. He showed me some of the ice. The same man had a pet bird of the species known as a black-headed stilt, which froze to death last night in his kitchen. The thermometer at this place on Thursday marked 66°. Yesterday it had fallen to 33°, a fall of 33° in twenty-four hours. It has since been down to 28°, at which point orange trees begin to wilt. All the banana plants, the pawpaw trees, and the young orange trees in the State are ruined."

The only other directions from which the winds might blow cold is the north-east and east, but from these quarters it comes across the Middle Atlantic laden with moisture and tempered so that unless it blows with the force of a gale it is quite endurable. In Nassau the occasions for a fire for any other purpose than cooking are so few that the houses, with one exception, are built without chimneys.

As for the moisture of the air, it can readily be understood that with the thermometer rarely changing more than five to nine degrees, rainfalls are not very abundant, and persons who depend solely upon the indications of the rain gauge for the degree of moisture will be quite mistaken.

The fact is that the air is quite laden with moisture which

* Surgeon Henry, stationed at this post, who has kept meteorological records for several years, said that this was the lowest temperature experienced since 1866.

only appears in the form of vapor when the south wind has blown for some time, and also with the sudden fall of temperature which always occurs as the sun goes down and its heat rays are absorbed by the longer distance they are obliged to pass through the moist air. It is then that the dew is deposited; and sometimes so profusely, that one might suppose that there had been a shower. When, however the equilibrium has been established by radiation of heat from the surface of the earth, and the air and land are more nearly alike in temperature, the atmosphere becomes clear again.

If at such times the fall in temperature were greater, the effect would be to render the place damp and chilly, and such troubles as rheumatism and neuralgia would be very common and distressing; as it is, these affections are not only said to be rare in the Bahamas, but are very much improved by a residence there. Then, too, for diseases of the respiratory passages, such as we have in this region, in which the mucous membranes are irritable and dry, and for the relief of which we resort to douches and inhalations of vapor, a residence during even a few days in this climate affords remarkable relief.

In those forms of lung trouble where there is profuse expectoration and perspiration, we should hardly think of recommending patients to visit the Bahamas. But in the early stages of chronic pneumonia and catarrhal pneumonia, in tuberculosis, convalescence from acute diseases, in malarial affections, and in exhaustion from over-work and worry, the advantage of being able to live, if necessary, out of doors, without the fatigue of heavy clothing; the comparative freedom from risk of catching cold, and the purity of the atmosphere, render this one of the most healthful as well as available resorts of which we have any knowledge.

Another evidence of the saturation of the air is the luxuriance with which vegetable life flourishes upon this rocky soil. Some plants which require aluminum and silex in their growth would starve, but succulent growths, like the cactus, palm, bread-fruit, all the varieties of the *citrus* family, the cocoanut, sugar cane, pineapple, etc., are to be found nowhere in finer condition or greater variety than here. Wherever there is an inch of soil there is something growing, and even the soil is not essential, for back in the suburbs of the town, gorgeous orchids and the curious *Briotherium* hang from the trees and sprout from the stone walls, depending on the air alone for their sustenance.

So much for the natural advantages of the place. Now as regards the conveniences for living, without which no climate, however salubrious, can be of much service to an invalid.

The land rises gradually from the edge of the harbor, and the town, which is a little more than two miles in length, is laid out in pretty regular blocks, the greater part of which are used as grounds surrounding the houses. On the crest of the slope, which is about ninety feet high, overlooking the town and harbor, are some of the principal private dwellings, together with the residence of Governor Robinson, and the hotel. The streets are cut into the limestone, of which the island is so largely composed, and owing to their grade and the porous nature of the rock they are dry almost immediately after a shower. The only sewer, so far as we could learn, is the one extending in a direct line from the Royal Victoria Hotel to the harbor. Nearly all the water consumed for drinking and cooking is derived from the rainfall, and is stored in well-cemented subterranean tanks. Wells have been sunk in the rock in many places, but the water found in them is more or less brackish, and rises and falls with the tide, floating on the surface of the salt water, which percolates through the porous rock.

Among other curiosities we brought home some small samples of the waters from these different sources, and the following analyses of them, by Dr. Charles A. Doremus, will give as good an idea as could be had from the quantities analyzed:

		Solids per gallon.	Chlorine per gallon.
No. 1.	Distilled water.....	not taken.	0.1213 grains.
" 2.	Croton water.....	not taken.	0.4852 "
" 3.	Tank water.....	2.00 grains.	0.4852 "
" 4.	Well water (A).....	18.00 "	2.6686 "
" 5.	" " (B).....	102.40 "	18.9228 "

"Only No. 5 contains solid residue in excess. It shows signs of organic matter, slight indication of ammonia, and contains carbonate of lime in solution in excess of carbonic acid. There is too small a quantity to determine either organic impurities, ammonia, or metallic bodies. The tank water shows nothing exceptional in chlorine or residue. No. 4 also contains carbonate of lime."

No. 3 was taken from the tank which was the source of the hotel supply, and Nos. 4 and 5 from wells in the grounds of one of the physicians of the place. No. 4 was quite palatable and was used by some of the neighbors, although the doctor's family used rain water from their tank. This well could not have been more than four hundred feet from tide water. Well No. 5 had an adjoining cess-pool between it and the sea, and was considerably further away from tide-water than No. 4. The influence of the cess-pool was quite as markedly apparent in the water itself as the difference in solid constituents is in the above analysis; and although some persons resorted to this well for water, as was shown by the bucket and appliances for raising it, it was not a "popular" one. The visitor to Nassau need have no fear of trouble from this source, however, for tank-water (for which there is storage capacity for 300,000 gallons) alone is used at the hotel for drinking purposes, and the analysis shown above indicates that he gets nothing better at home.

The Royal Victoria Hotel, at which most visitors stop, although board and comfortable lodgings may be had in the town, was built by the Colonial Government a number of years since, and is leased to a gentleman living in New York State, with the provision that a first class American hotel shall be kept from November to April. The building is four stories in height, is solidly built of lime-stone, and is surrounded with broad piazzas on all but the upper floor. The rooms are high, well lighted, and have tramsom ventilators over doors and windows, the windows themselves extending to the floor. The walls are painted. There are no carpets, and the floors are of Southern pine, protected at the bed-sides by rugs. There are no drain or water pipes, chimney flues, or ventilating shafts in the building, the bath-rooms and water closets being in a two-story building in the rear, to which the approach is by covered corridors. The parlors are quite as comfortable as is needed in view of the little use that is likely to be made of them where out-of-door attractions are so great for all who are able to leave their rooms. The dining-room is large and well furnished, and the table is excellent, nearly all the supplies, excepting the native fruits and fish being bought, by an agent of the house, in the New York markets. Altogether we were pleased with the hotel and the way in which it was kept. Some things were not entirely satisfactory, but they were not of a character to interfere with its purposes as a health resort. Many of the hotels considered to be "first class," to which we resort in warm weather, are not to be compared with it.

An item of considerable importance to one who is in search for a sanitarium is the nature of the amusements which may be had. At Nassau one is practically cut off from communication with the world, excepting by the steamer, and letter reading and writing, however enjoyable for a time, is not calculated to satisfy entirely. One who is able to be much out of doors can find such a multitude of curious and beautiful things that sight-seeing, bug-hunting, fishing, coral and shell collecting, and hunting may absorb a great deal of time. Providence seems to have intended the Bahamas for this purpose, for the wonderful things which are to be found out of doors are an incentive to those whose recovery of health depends in great part upon their spending a large portion of their time in the open air. Still one must sometimes stay in the house, and the ladies, unless of an exceptional sort, are likely to spend most of their time there. For such the library, which is but a short distance from the hotel, has six thousand volumes and an abundance of serial publications. The drives are very good, and the carriages, although somewhat antiquated, are comfortable. The hotel itself provides one with good society, if its register and the visitor's book at the United States Consulate are to be trusted, and it is rarely that the better

class of permanent residents at such places are as hospitable and kind as they have a reputation for being at Nassau. Governor Robinson and his lady hold stated receptions to which all proper persons are welcomed, and the United States Consul, Mr. Mahlon Chance, showed, during our short stay, a desire to render the visit of his countrymen at the Bahamas as agreeable as possible.

Those who are in need of medical attendance, can find very good physicians in the place. We had the pleasure of meeting some of them, and can testify to their intelligence, gentlemanly character, and, notwithstanding their insular location, familiarity with recent medical literature.

EXTRACT OF LOGWOOD AS A DISINFECTANT.

FOR twelve years I have used Extract of Logwood as a disinfectant and deodorizer in cancer. I use it in the following manner:—Powdered logwood and hog's lard, of each, two ounces. To be mixed and made into a pomade, spread on lint and applied to the sloughing ulcer; the effect is magical, all the odor will disappear in half an hour. The astringency of the logwood will suppress the discharge. No other known agent will fill the indications so well, and yet I have not found a single member of the profession who had any knowledge of the agent until I suggested it. Will some of your numerous readers give it a trial and report the results.

H. MALLORY, M.D.

HAMILTON, OHIO, Jan. 13th, 1877.

BIBLIOGRAPHY.

THE ELECTRIC BATH: Its Medical Uses, Effects, and Appliance, by GEORGE M. SCHWEIG, M.D. New York: G. P. Putnam's Sons. 1877. 12mo, pp. 134.

FOR some time it has been known that Dr. Schweig was making considerable use of the galvanic current as modified by the submersion of the body in water, and the present work has been looked for as an exposition of the method employed and its results. Those who may desire to repeat his experiments, or to investigate further the employment of this agent, will find in its pages admirably complete directions for the arrangement and mode of using the apparatus. As for the results, although it does not appear that the author has let his subject become such a hobby that he sees a panacea in it for all ills, or for more than a very few, still we must confess that we are not convinced that the results of the employment of the electric (sic) bath possess advantages over the ordinary modes of electro-therapeutics which balance its inconveniences.

EPITOME OF SKIN DISEASES, with Formulæ, for students and Practitioners, by TILBURY FOX, M.D., F.R.C.P., etc., and T. C. FOX, B.A., M.R.C.S. Philadelphia: Henry C. Lea, 1876.

THIS is a handy duodecimo of 120 pages, into which the authors have condensed a good deal of practical information regarding skin affections, including a number of approved formulæ for their treatment. Pretty much everything in the way of a theoretical or debatable nature has, of necessity, been omitted and, so far as it goes, the little book will be found, we think, quite reliable.

MICRO-PHOTOGRAPHS IN HISTOLOGY, by CARL SEILER, M.D., in conjunction with J. Gibbon Hunt, M.D., and Joseph G. Richardson, M.D. Philadelphia: J. H. Coates & Co.

No. 6 of Vol. I. of this publication contains pictures of "Amyloid infiltration of the Kidney" (× 180), "Hyaline Casts of advanced Bright's Disease" (× 180), "Uric Acid" (× 130), and "Triple Phosphates" (× 130). Judging by the notices which we see in foreign journals, it is meeting with the same favor abroad that it finds here.

MEDICINAL PLANTS.—Being Descriptions, with Original Figures, of the Principal Plants Employed in Medicine, and an account of their Properties and Uses, by ROBERT BENTLEY, F.L.S., etc., and HENRY TRIMEN, M.B., F.L.S.

SINCE our notice, in June last, of this publication, we have received parts 6 and 7.

There is no falling off either in the beauty of the plates or the character of the text. The former are made to include all the characteristic features of the plants represented, and the latter embraces a description, the circumstances attending the growth, official parts and names, general characters and composition, and medical properties and uses. Another valuable feature is a list of references in each case, which will enable the student in pharmacognosy to extend his researches beyond the limit of the article in question.

The plants mentioned are as follows:

PART 6.—*Anamirta paniculata* (Cocculus indicus), *Canella alba*, *Barosma betulina* (Buchu), *Barosma serratifolia* (Buchu), *Physostigma venenosum* (Calabar bean), *Pterocarpus Marsupium*, *P. Santalinus*, and *Hemidesmus indicus* (Indian sarsaparilla).

PART 7.—*Illicium anisatum* (Star-anise), *Polygala Senega* (Seneca Snake-root), *Camellia Thea* (Tea), *Melaleuca minor* (Cajuput), *Uncaria Gambier*, *Chimaphila corymbosa* (Pipsissewa), *Ophelia Chirata* (Chiretta), and *Schœnocaulon officinale* (Sabadilla).

LETTRES HISTORIQUES SUR LA CHIMIE, Addressées à M. Professeur Courty. A. BÉCHAMP. Paris. 1876. 8vo, pp. 621.

Prof. Ad. Wurtz, it will be remembered, made the assertion a few years ago that "chemistry is a French science," for which he was deservedly criticised by the chemists of other 'civilized' countries. Mr. Béchamp now takes up the cudgel again, and publishes a book dedicated to the memory of the celebrated Lavoisier, "who has been treated with indignity, and calumniated by the German chemists Kolbe, Liebig, and Volhard." The *Journ. de Ph. et de Chim.* remarks, that "after having read these letters, one cannot help acknowledging, with Dumas, Wurtz, and Béchamp, *that chemistry is really a French science*, which was founded by Lavoisier, of immortal memory!"——Why then should not botany be a Swedish science, for was not Linnæus a Swede? or why should not electricity be an American science, for was not Franklin an American? If some of the French savans would exert themselves, they might perhaps find the seeds of so many sciences sown in France that there would be nothing left to "outside barbarians."

NEW BOOKS.

Dolbear (Prof. A. E.). The Art of Projection. A Manual of Experimentation in Physics, Chemistry, and Natural History, with Porte-Lumière and Magic Lantern. Illustrated. 12mo.

Beer (R. K.). Pharmacological Dictionary. 8vo, pp. 83.

Douglas (S. H.) and **Prescott** (A. B.). Qualitative Chemical Analysis. 2d ed.

Oehme (F. G.). Therapeutics of Diphtheritis.

Ricketts (P. de P.). Assaying and Assay Schemes.

Jackson (L. D'A.). Simplified Weights and Measures.

Self Cure of Love of Liquor and the Opium Habit. 12mo, pp. 96.

Smith (W. G.). Mushrooms and Toad-Stools. 3d ed. 12mo, pp. 64. Illustrated.

Eltoft (T.). The Combined Note-Book and Lecture Notes, for the Use of Chemical Students: Inorganic Chemistry. 4to.

Reynolds (J. E.). Six Short Lectures on Experimental Chemistry. 2d ed. 8vo, pp. 76.

Everett (Professor). Illustrations of the Centimetre-gramme. 8vo. London.

Petersen (J.). Hauptmomente in der geschichtlichen Entwicklung der medicinischen Therapie.

Pelletau (Dr. J.). Le Microscope: son emploi et ses applications à la Zoologie, Botanique et l'Histologie. 1 vol.

Sachsse (R.). Die Chemie u. Physiologie der Farbstoffe, Kohlehydrate u. Proteinsubstanzen.

Clowes (Frank). An Elementary Treatise on Practical Chemistry. 2d ed. Post 8vo, pp. 380. London.

Biltz (E.). Vielseitige Anwendung einer scharfen chemischen Reactionsmethode. 8vo. Erfurt. [This method is based mainly upon the phenomena resulting from superimposing a layer of one liquid over that of another, and observing the line of contact.]

Dellingshausen (N.). Die rationellen Formeln der Chemie auf Grundlage der mechanischen Wärmetheorie entwickelt. 2 parts, 8vo. Heidelberg.

Dawikowsky (F.). Die Leim- und Gelatine-Fabrikation. 8vo. Wien.

Gasparin (P. Le). Traité de la détermination des terres arables dans le laboratoire. 8vo, pp. 270. Paris.

Kühne (W.). Über des Secret der Pancreas. 8vo. Heidelberg.

Post (J.). Grundriss der chemischen Technologie. I. Fabrikation der Rohproducte. 8vo. Berlin.

Valentin (W. G.) A Course of Qualitative Chemical Analysis. 4th ed., pp. 270, 8vo. London.

The Art of Brewing on Scientific Principles. New ed. enlarged and improved. 18mo, pp. 240.

Helmsley (W. B.). Handbook of Hardy Trees, Shrubs, and Herbaceous Plants. Based on the French work of MM. Decaisne and Naudin. 8vo, pp. 720.

Craig (William). Milne's Posological Tables. Being a Tabular Arrangement of all the Medicines contained in the British Pharmacopœia, with Dose, Action, and Form of Administration. 32mo.

Ross (Wm. A.). Pyrology; or, Fire Chemistry. 4to.

Smoker's Guide, Philosopher, and Friend, etc., etc. Historical, Botanical, Manufactural, Anecdotal, Social, Medical, etc. 12mo, pp. 132.

Vizetilly (Henry). Facts about Sherry. Gleaned in the Vineyards and Botegas of Jerez, Seville, Moguer, and Montilla Districts during the Autumn of 1875. With numerous illustrations from original photographs and sketches. 12mo, pp. 100.

BOOKS AND PAMPHLETS RECEIVED.

Fox (Tilbury). Epitome of Skin Diseases, with Formulæ. Henry C. Lea.

Routh (C. H. F.). On Overwork and Premature Mental Decay: Its Treatment. 8vo (12.5 x 18.5 c.m.). From the author.

Foster (M.). A Text Book of Physiology. Macmillan & Co.

Fotheringill (J. Milner). The Practitioner's Handbook of Treatment; or the Principles of Therapeutics. Henry C. Lea.

Noback. (Fried.). Münz-, Maas-, und Gewichtsbuch. Das Geld-, Maas-, und Gewichtswesen, die Wechsel und Geld-Kurse, das Wechselrecht und die Usanzen, etc., aller Länder. 2d ed. 8vo. Leipz., 1877. Pp. 1167.

[The most complete of all works on weights, measures, and moneys.]

Proceedings of the American Pharmaceutical Association at the 24th Annual Meeting, held in Philadelphia, Pa., September, 1876. With a portrait of J. Milhau. 8vo. Phila., 1877. Pp. 909.

Pamphlets.

Sayre (Lewis A.). Report on Pott's Disease, or Caries of the Spine Treated by Extension and the Plaster of Paris Bandage. From the author.

Davis (F. H.). Liebig's Extract of Malt and its Chemical Composition, Manufacture, and Therapeutical Uses. From the author.

Parsons (R. L.). Annual Report of the Medical Superintendent of the New York City Lunatic Asylum, (1875).

Squibb (Edward R., M.D.). Note on the Administration of Phosphorus. Republished from the Proceedings of the American Pharmaceutical Association.

Squibb (Edward R., M.D.). The American Medical Association and the Pharmacopœia of the United States. Published by the author, Brooklyn, 1876. 8vo, pp. 59.

Transactions of the Wisconsin State Medical Society, 1876. 8vo, pp. 149.

Transactions of the Colorado State Medical Society, 1876. 8vo, pp. 90.

Krause (Dr. G.). Die Industrie von Stassfurt und Leopoldshall, und die dortigen Bergwerke. 8vo. Cöthen.

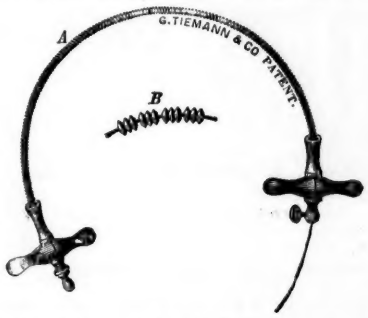
Hoffmann (Dr. R.). Sammlung aller wichtigsten Zahlen und Formeln für Chemiker. Herausg. v. Dr. Carl Schädler. 8vo. Berlin.

King (Geo.). A Manual of the Cinchona Cultivation in India. Fol. Calcutta, Govern. Print. Off., 1876.

PHARMACEUTICAL SUNDRIES AND NEW INSTRUMENTS.

A New Saw.

MESSRS. GEORGE TIEMANN & CO., Surgical Instrument Makers of this city, have produced an entirely novel saw, the invention of Mr. F. A. Stohlmann, whose ingenuity has already done so much to improve the armamentarium chirurgicum. It is intended to replace the chain-saw in common use, and is entirely free from the tendency to bind, kink, and break which characterizes the latter instrument. It consists, as will be seen in the cut, of two handles connected by a wire of cast-steel, on to which are strung a series of



steel beads with sharp cutting edges. The instrument might indeed be called a file quite as appropriately as a saw, and its action on a bone is said to be more like that of the first-mentioned tool, in the absence of such rough edges as are made by the saw in common use. No needle is required to carry it through or around a bone, and its beads can be readily strung on to a new wire in case of a break. Another advantage lies in the fact that the beads, by their free rotation, present fresh cutting edges; and still another is the considerable difference in price between this instrument and the ordinary chain-saw.

Self-Lighting Gas-Burner and Matchless Cigar-Lighter.

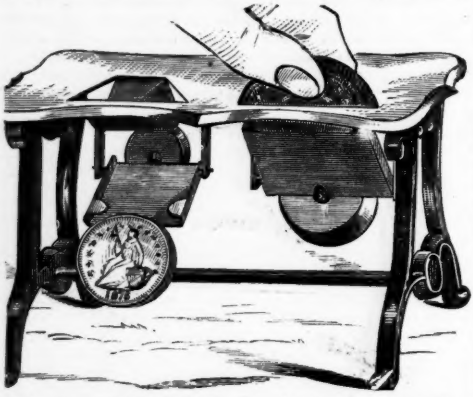
THE STOCKWELL SELF-LIGHTING GAS-BURNER CO. offer for sale a gas-burner which is lit by the motion of opening the cock, and a lighter for cigars in which a modification

of the same mechanism ignites a fuse. A ribbon of paper has on it, at intervals, a fulminating mixture which is exploded

by a spring hammer. In the lighter, a cut of which is here shown, pushing in the slide shown at the right end, moves the ribbon along the proper distance and disengages the lock. The convenience with which the burner can be lit instantly makes it especially valuable for a dispensing counter, and the cigar-lighter is already having a large sale among smokers. The burners cost, at retail, $0.75 to $1.00; the lighters something less. Each roll has 135 lights, and sells at 25c. for four.

Counterfeit-Coin Detector.

NOW that we are returning to the use of coin in making change, it is found that the number of counterfeit pieces may be counted by hundreds of thousands. Mr. James Brooks, of the Government Secret Service, quite recently discovered 40,000 counterfeit fifty-cent pieces in one hiding-place, and one can judge from that how common they must be in the pockets of the community. Some of these spurious pieces are so perfect in their workmanship that, aside from the fault of their light weight, they are with difficulty detected by variations in size, feel, and general appearance. Apothecaries are quite as much exposed as any other dealers to fraud from this source, and can as little afford to run the risk of making change with counterfeit pieces, however innocent they may be of intention. It is not, therefore, out of place to call their attention to a remarkably ingenious



contrivance sold by Baldwin, Boynton & Co., at 111 Nassau St., in this city, which measures, weighs, and rings quarter and half dollar pieces in the most expeditious manner. Two little hoppers are arranged so as to permit the passage respectively of twenty-five and fifty-cent pieces, which then slide upon the pan of a balance. If they are of proper weight, the pans are tipped down until they slide out onto the counter or table. If, however, they are too light, they are retained in the pans. By shifting the position of the counterbalancing weights, the test can be made as delicate as any scales. If, in order to secure proper weight, the spurious piece has been made larger than the genuine, the gauge (shown on the edges of the smaller of the pans in the cut), will prevent its entrance. By placing the apparatus on a solid or resounding base, we have found that the "ring" of the coin as it drops from the pan affords another evidence of its character. These tests sell for $2.50 or $3.00 apiece, according as they are or are not nickel-plated.

Matthews' Soda-Water Apparatus.

WE had the pleasure of visiting the exhibition of Soda and Mineral Water Apparatus which Mr. John Matthews gave during the first ten days of this month at his salesrooms and manufactory on First avenue. It would be quite impossible to describe in the space at our command the novelties and beauties of the various appliances shown and which are connected with this extensive business. Until quite recently this has been a peculiarly American specialty, and there is little question that even now the elegance of the dispensing apparatus and perfection of the generating machines excel anything made in other countries. Among the manufactories here, the one we refer to has few if any equals, and the exhibit made this year shows that constant progress is being made, not only in the beauty of designs, but also in adapting the apparatus to the wants of various localities and business circumstances. In the way of draught apparatus a range of about forty designs, and prices from $12 to $4,000, ought, certainly, to suit almost any taste or pocket. Not the least attractive features of the display were the artistic surroundings and arrangement of the rooms and stock.

Champaca.

MICHELIA CHAMPACA (Linn.) is a native of India, and belongs to the Magnoliaceæ. Like most others of this order, its flowers are strongly odoriferous, and if the perfume of this name made by Rigaud & Co., of Paris, may be taken as an indication, their fragrance must be very agreeable. Fougera, of 30 N. William St., is agent for this new perfume in New York, and furnishes it put up in handsome, globe-stoppered, two-ounce bottles for $8.00 per dozen.

In the report of the Committee of the Centennial Exhibition appointed by the Amer. Pharm. Assoc. it is stated that the essential oil of champac[c]a is supposed to be derived from an orchid grown in the Philippine Islands, and that its cost is greater than that of Ihlang-Ihlang. The latter is twice as expensive as the finest otto of rose.

Perfumes of Ch. Rameau.

MESSRS. MCKESSON & ROBBINS have shown us a box containing a half-dozen of Ch. Rameau's handkerchief perfumes (of which the adjoining cut is a fair representation), which, aside from the good quality of the extracts, is so taking in the way it is gotten up that it cannot fail to please. Each bottle has its label printed in gold upon a distinctive shade of satin. A satin band of the same color, with the name of

the perfume, surrounds the neck, and the cork is covered with the same material, tied with a gilt cord. Each bottle is then surrounded with a shield of pasteboard, and a wrapper of satin like that used for the bottle covers all. A gilt seal fastens the folds at the end, and the label in the front is also printed in gold. Each bottle is then placed in a compartment of a neat box made of a light wood like poplar. They sell for $6.50 per half-dozen.

Becker's Metric Weights.

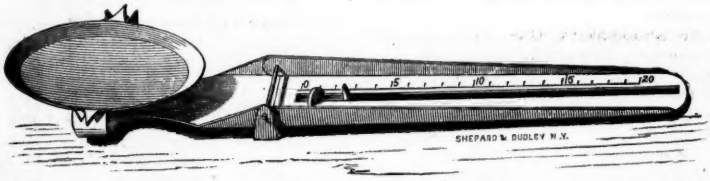
In February last we published an illustration of Becker & Son's new balance, which had been so highly recommended for its adaptability to the requirements of the prescription counter. They now offer a set of metric weights, as shown in the cut below, which for beauty, accuracy, and

cheapness, can hardly be excelled. The smaller pieces are of aluminium, and range from 1 centigramme to 5 decigrammes (50 centigr.). The larger pieces are of turned brass, and embrace convenient sizes from 1 gramme to 100 grammes. The cover is lined with velvet, which serves not only to keep the smaller pieces from shifting, but makes also a dust-tight packing. The price is $5.50, and their accuracy is guaranteed.

Those apothecaries who contemplate the purchase of a set of metric weights in order to be prepared for prescriptions in which this system is employed, cannot do better, all things considered, than write to the Beckers, at 232 East 128th street.

Rhea's Pocket Scales.

Shephard & Dudley, well-known importers and manufacturers of surgical and medical instruments, etc., offer for sale a novelty in the way of scales adapted for weighing small quantities of medicine, a cut of which is appended, which shows the full size of the smaller of the two kinds. The beam is hinged at the fulcrum, the sliding saddle serves as a weight, and the removable pan rests on sharp points. We have tested it several times, and find it



sufficiently accurate for ordinary purposes. It is more convenient than the usual balance-scale with cords and pans; is compact (its case occupying but $2\frac{3}{4} \times 1\frac{1}{4} \times \frac{1}{2}$ inches in its diameters), and for the physician's pocket or for the family medicine chest it will be very handy. The two sizes sell for 50c. to $1.00 each, with liberal discounts to the trade.

Prof. H. H. Babcock, of the Chicago College of Pharmacy, has resigned the Chair of Botany on account of ill-health, and Prof. H. D. Garrison is to complete the lectures in the course, in addition to his other duties as professor of Materia Medica.

M. Méhu has been elected to the office of Vice-President of the Société de Pharmacie.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, providing they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

Preservation of Vegetable Bitters. (G. S., Chicago).—Vegetable fluid extracts, such as you describe, cannot be kept long without the addition of a preservative in the shape of alcohol or sugar, or some other protecting agent. If you were to indicate to us the nature of the ingredients and the state of concentration, we might possibly be able to give you more information.

Ferrum Dialysatum (A. W. S., Cincinnati).—The following are Dr. Hager's directions for preparing this compound, which is also called Liquor Ferri Peroxychloridi or Liquor Ferri Subchloridi. Dilute 10 parts of solution of ferric chloride with cold water, precipitate it with dilute (1:10) water of ammonia, wash the precipitate with cold water and add it, while still moist to 11 parts of solution of ferric chloride contained in a sufficiently capacious flask. Put it aside for one day, frequently agitating, until the ferric oxide is dissolved. Filter if necessary, transfer the solution to a parchment-dialyser, which must be filled so that the surrounding water reaches to one-third of the height of the within contained solution. Set the apparatus aside in a cold place for about 10 days, and remove the outer liquid occasionally, replacing it by pure water. As soon as a small sample of the solution removed from the dialyser ceases to produce cloudiness with silver nitrate, the solution is poured out into a beaker, and its specific gravity taken, which should be 1045 to 1046; if found to be too dilute, it must be concentrated by evaporation; otherwise it must be diluted. 100 *parts of this solution contain* 5 *parts of anhydrous ferric oxide.* Supposing the specific gravity of 240 parts of the solution had been found to be 1018, this would correspond to a percentage of 2 parts of anhydrous ferric oxide. Then by saying: $5 : 2 = 240 : x$, we find x to be 96; that is, the 240 parts of specific gravity 1018 must be evaporated to 96 parts to contain 5 per cent. of ferric oxide, or, which is the same thing, to have the specific gravity 1045. This evaporation must be conducted very carefully, by heating a portion of the solution (about 90 parts), in a shallow capsule on the water-bath, at a temperature not exceeding 60 or 70° C., stirring constantly with a glass rod, and preserving the original height of the liquid by the gradual addition of more of the solution.

The solution has an intense reddish-brown color, a slightly styptic taste, and must be kept in glass-stoppered vials in a cool and dark place. During its preparation daylight and heat must be avoided as much as possible. This solution contains the following percentages of ferric oxide:

Spec. Gr.	% Fe_2O_3	Spec. Gr.	% Fe_2O_3	Spec. Gr.	% Fe_2O_3
1102	10.	1063	6.5	1027	3.
1096	9.5	1057	6.	1022	2.5
1091	9.	1052	5.5	1018	2.
1085	8.5	1046	5.	1014	1.5
1079	8.	1041	4.5	1009	1.
1074	7.5	1036	4.	1004	0.5
1068	7.	1031	3.5		

A less circumstantial process, which however yields a less pure product, is the following: Dilute 85 parts of ferric chloride solution with 800 parts of cold distilled water, precipitate it with dilute (1 : 10) water ammonia, collect the precipitate on a strainer, squeeze it, wash it as quickly as possible with cold distilled water, and transfer it into a large flask containing 10 parts of solution of ferric choride diluted with 40 parts of distilled water. Set aside for four days in a cold place, and shake frequently. Then add to it moist hydrated ferric oxide prepared, as before stated, from 25 parts of solution of ferric chloride, set again aside for 3 or 4 days, occasionally agitating. Dilute the solution with water, so that after filtration it amounts to 520 to 525 parts. If too dilute it must be carefully evaporated to that weight. This solution has the same spec. grav. and percentage as the first mentioned one.

To Purify Mutton-Suet. (F. W. L., Phila.)—Unless the suet is very old or rancid, there is no necessity of using any saline compounds in its preparation. The usual way is to boil the suet with a little water, which should be repeated until it is quite sweet and free from unpleasant smell.

Technological Works. (Rod. A. Wh., Cincinnati.)—The following works may answer your purpose:

MAIER, Karl. Die Ausbrüche, Secte und Südweine. Vollständige Anleitung zur Bereitung aller Gattungen . . . . Weine, etc. 8vo, pp. 160.

SCHÖNBERG, Alois. Populäres Handbuch der Spiritus- und Presshefen-Fabrikation. 8vo, pp. 176.

GABER, Aug. Die Liqueur-Fabrikation. 8vo, pp. 384.

ASKINSON, G. W. Die Fabrikation der ätherischen Oele. 8vo, pp. 224.

Key-Tse-Sing. (E. A. A., Oblong, Ill.)—We have traced this substance, also called Tsa-Tsin, as far back as 1849, and have taken steps to obtain further information. As soon as it is received we will advise you.

Salicylic Acid. (Dr. O. C. F., Putnam, O.)—The formula for salicylic acid mixture, published on p. 371 of our last volume, has been tried by us, and we have found the same trouble as you: it precipitates, or rather, all the acid is not dissolved. If you increase the quantity of glycerine to two fl. oz., and the quantity of potassium bicarbonate to grs. 100, you will obtain a clear solution, which is at the same time almost neutral; 122 grains of the acid require 100.1 gr. of potassium bicarbonate for neutralization.

A. O. H. (Prescott, Can.)—We shall try and get the formula for you for next issue, if possible.

Formulæ for Elixirs. (J. D. S., Worthington, Mass.)—The desired formulæ are nearly all prepared with a standard non-medicated simple elixir, of which two varieties are in use, one being colorless, the other colored. Formulæ for these, as well as the others mentioned, may be found on page 62 of this number.

Cheap Ink for Shoemakers' Use.—A subscriber desires a receipt for making a *cheap* ink, for shoemakers' use. He says that he has been in the habit of supplying the following, which was found to answer well, but is too dear:

Alcohol	1 pint.
Tincture of Iron	3 fl. ounces.
Extract of Logwood	1 ounce.
Powdered Galls	½ ounce.
Olive Oil	½ ounce.

Condurango. (G. S. R., Providence, R. I.)—Condurango was about 1870–72, extensively advertised as a cure for cancer. We have seen one case of scirrhus of the breast in which it appeared to be a palliative, but we have heard of no case where it effected a cure. It does appear to have properties as a tonic, and can be had in the market for *about* 50 cents per lb.

Rosin-Weed. (M. W. P., Newark, N. J.)—*Silphium gummiferum*, or rosin-weed, is one of several species of Silphium, which, according to King, yield by exudation and incision a fine, fragrant, and bitterish gum, like frankincense, white or amber colored, and is sometimes chewed by the Indians, at the West, to sweeten the breath. It frequents rich bottom-lands, and bears large yellow flowers in August. Its large, long, and crooked root is the officinal part, and its properties are imparted to water or alcohol. It is said to be emetic in decoction. Its resinous secretion, which is abundant, very closely resembles mastich, and might be used in place of it. This resin appears to have diuretic properties, increasing the flow of urine, and imparting to it an aroma. The root may be prepared by cutting it into small pieces, covering layers of it with loaf-sugar, and pouring on brandy. After standing several days, express, strain, and bottle for use. This is recommended by King as an expectorant. The fluid extract, so far as we can learn, is made in the usual manner.

NEW PATENTS AND LAWS.

[*We will furnish gratis, to subscribers, any information relating to new patents which can be obtained from the Official Gazette of the Patent Office; and for 50c. will give copies of the drawings of such as are illustrated. Electrotypes of the illustrations contained in* NEW REMEDIES *will be furnished for 50c. per square inch.*]

TRADE-MARKS REGISTERED IN U. S. PATENT OFFICE.

Certificate dated Nov. 28, 1876.

4,156. **Adhesive Cement.**—John A. Keenan, Camden, N. J. "A representation described as follows: A weight suspended from a broken article that has been repaired, or from pieces of material that have been united, thus apparently illustrating the strength of the cement."

Certificates dated Dec. 5, 1876.

4,173. **Medical Preparation.**—John Fareira, Philadelphia, Pa. "The word-symbol 'CONTINENTAL.'"

4,176. **Volta or Electro-Galvanic Goods for Medical Purposes.**—John E. Hetherington, Cincinnati, Ohio. "A symbol or device consisting of the representation of a group of elements arranged to form a volta-galvanic or electric chain or battery, or of a part of a chain or battery, from which lightning-flashes proceed. Across the face of the above-described symbol are arranged the words 'Pulvermacher Galvanic Co.,' and below is a correct fac-simile of the autograph signature of J. L. Pulvermacher."

4,177. **White Lead.**—Samuel Jacobs, New York, N. Y. "The arbitrary words 'GOLD SEAL.'"

4,192. **Grocers' Drugs and Sundries.**—Samuel Wilde's Sons, New York, N. Y. "The representation of a boar's head."

Certificate dated Dec. 12, 1876.

4,205. **Medical Compound of Oils.**—Koh-I-Noor Manufacturing Company (limited), Philadelphia, Pa. "The word-symbol 'KOH-I-NOOR.'"

Certificates dated Dec. 19, 1876.

4,209. **Medical Compound.**—Edwin F. Babbage and Edward F. Babbage, Rochester, N. Y. "The letters P. H. A. T. in duplicate, being initials to the words 'Please Have A Tonic,' and be 'Phat, Healthy, And Tough,' arranged around, above, and below an oval figure, within which are likenesses of the applicants."

4,213. **Medical Compound.**—George H. Fairbanks, Boston, Mass. "A figure of a man in full winter costume, upon which is inscribed the 'Hit-a-oss.'"

4,221. **Medical Compound.**—John M. Grosvenor, New York, N. Y. "The word-symbol 'LIVERAID.'"

4,222. **Medical Plasters.**—John M. Grosvenor, New York, N. Y. "The word-symbol 'BILANODYNE.'"

4,229. **Medical Compound.**—Robert Rohland, New York, N. Y. "The words 'Dr. Lobethal's Essentia Antiphthisica.'"

Certificates dated Dec. 26, 1876.

4,232. **Remedy for the Cure of Asthma.**—Joseph H. Guild, Rupert, Vt. "The fanciful words 'GREEN MOUNTAINS.'"

4,233. **Medical Preparation.**—Wilmer L. Keller, Baltimore, Md. "The arbitrary-selected words 'LIFE DROPS.'"

4,236. **Bitters.**—William H. Knoepfel, New York, N. Y. "The word-symbol 'ANGOSTURA.'"

4,239. **Cologne.**—George E. Mitchell, Lowell, Mass. "The words 'Mitchell's Memorial' used in connection with a picture of the Art Gallery."

4,240. **Medical Preparation.**—John M. Richards & Co., New York, N. Y. "The word-symbol 'HYDROLEINE.'"

4,244. **Preparation for the Hair.**—F. R. Taylor & Co., Baltimore, Md. "A triangle, within which is a druggist's mortar and pestle, with an anchor above it. To the anchor is attached a rope, which falls down and curls around the lower portion of the mortar, the whole being enclosed by a ring."

LABELS.

Certificates dated Nov. 28, 1876.

913. **"Ashley's Healing Compound."**—Silas E. Ashley, New Bedford, Mass.

914. **"Dr. Freeman's Anodyne Cough Remedy."**—D. S. Freeman, Tidioute, Pa.

915. **"Dr. C. McLane's Lung Syrup."**—W. L. McCord & Co., Pittsburg, Pa.

916. **"Herb Wine—Rigg's Radical Cure for Dyspepsia."**—James Rigg, Dubuque, Iowa.

Certificate dated Dec. 5, 1876.

921. **"La Vert Compound Vegetine Extract of Helianthus Annus, or Common Sun-Flower."**—San Francisco Manufacturing Company, Chicago, Ill.

Certificates dated Dec. 12, 1876.

922. **"Spongoid Capsicum Drafts."**—John F. French, New York, N. Y.

923. **"Pickett's Gettysburg Bitters."**—Charles Pickett, Norfolk, Va.

925. **"Bottled Plaster Salve."**—William S. Moat, Philadelphia, Pa.

926. **"Olive Liniment."**—Charles Roak, New York, N. Y.

927. **"Liquorice Coated Pills."**—Henry Thayer & Co., Cambridge, Mass.

931. **"E. K. Thompson's Sugar-Coated Dandelion and Mandrake Pills."**—Ebenezer K. Thompson, Titusville, Pa.

932. **"E. K. Thompson's Sweet Worm-Powder."**—The same.

933. **"E. K. Thompson's Great Healing Ointment."**—The same.

Certificates dated Dec. 26, 1877.

935. **"Infallible Eye-Wash."**—William E. Clarke, Providence, R. I.

936. **"Strongest Tincture."**—Lewis Sherman, Milwaukee, Wis.

PATENTS.

Patents granted Nov. 28, 1876.

184,762. **Explosive Compositions.**—Chas. De Lacy, San Francisco, Cal. An explosive compound consisting of pyroxyline, saw-dust, nitrate and chlorate of potash, and nitroleum.

184,804. **Surgical Saws.**—Frederick A. Stohlmann, Brooklyn, N. Y. [See cut and description on page 55.]

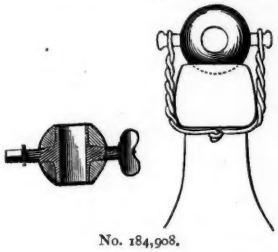
184,815. **Apparatus for Treating Substances with Hydrocarbon.**—William Adamson, Philadelphia, Pa.

184,825. **Methods of Preventing Dross in Galvanizing-Vessels.**—Joseph Bond, Jr., Philadelphia, Pa., assignor of one-half his right to Chas. F. Odiorne, same place. Plates the vessels with nickel.

184,883. **Bottle Stoppers,** etc.—J. L. Megret, Bordeaux, France.

184,898. **Apparatus and Processes for treating Wood for Charcoal and other Products.**—Henry M. Pierce, Detroit, Mich.

184,908. **Bottle Stoppers.**—W. A. Root, Bennington, Vt. To pour out the contents of the bottle, the glob-



No. 184,908.

ular stopper is first rotated on its pintles until the orifice in the stopper is in line with the mouth of the bottle.

184,925. **Methods of Packing Caustic Alkali.**—Thomas C. Taylor, New York, N. Y. Consists in inclosing the same in a solid molded form in a can, with a surrounding envelope of absorbent powder.

184,927. **Lubricating Oils.**—Joseph M. C. Thomas, Hawleyville, Iowa, assignor of one-half his right to C. M. Paschal, same place. A lubricating-oil composed of sal-soda, borax, prussiate of potash, common salt, castor-oil, sulphate of zinc, and water. The first four ingredients are dissolved in hot water, after which the remainder are added.

184,932. **Dry Electric Piles.**—C. L. Van Tenac, Paris, France, assignor to A. M. Hays, New York, N. Y.

No. 7,408.

Reissued.

7,408. **Stoppers for Bottles.**—F. Schlich, New York, N. Y., assignor of one-half interest to A. Feyh.

Patents granted Dec. 5, 1876.

184,963. **Processes and Apparatus for the Manufacture of Charbon-Roux.**—Geo. L. Harrison, Jr., of Philadelphia, Pa., assignor to Harrison Brothers & Co., same place.

184,966. **Magneto-Electric Machines.**—Alfred G. Holcome, New York, N. Y.

184,987. **Pneumatic Siphon-Pumps.**—V. H. Skiff, New York, and F. Coit, Brooklyn, N. Y. By pressure on the rubber bulb, air is forced into the reservoir, causing the liquid to flow into the empty vessel through the flexible siphon. When pressure in the bulb ceases, air is admitted through its valves to reservoir. By inverting the bulb the valves close.

No. 184,987.

184,984. **Processes of Water-proofing Fabrics.**—Wm. Pugh, Philadelphia, Pa. Consists in first treating them

with a compound of caustic soda, gelatine, linseed-oil, tallow, and resin, and after draining the goods, as described, treating them with the salt of alumina as set forth.

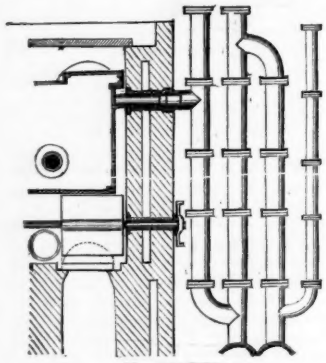
185,001. **Measuring-Faucets.**—R. Wasmansdorff, Genthin, Prussia.

185,003. **Measuring-Faucets.**—John M. Wheeler, Hillsdale, Iowa.

185,040. **Ozone-Machines.**—H. Milsom, Buffalo, N. Y.

185,052. **Roofing Compositions.**—Henry K. Shanck, Clayton, Ohio. A roofing and paving compound consisting of linseed-oil, oxide of manganese, and litharge combined, in the manner described, with shellac, coal-tar, sulphur, and hydraulic cement, the whole prepared in the manner and in the proportions set forth, and for the purposes specified.

185,141. **Manufacture of Acetic Acid.**—The National Chemical Wood-Treatment Co., Brooklyn, N. Y. Wood is distilled at a low temperature for the production of acetic acid. It is inclosed in a retort placed in a close oven, thus being surrounded by an air-bath.



No. 185,141.

The vapors are condensed in an air-condenser. The temperature of the retorts is regulated and controlled by dampers within the ovens. The retorts have wheels for running them into the ovens, their axles extending through the retorts, being protected by tubes. The oven-openings are beveled, forming, with the edges of the doors, V-shaped grooves, into which is packed the luting of clay.

Patents granted Dec. 12, 1876.

185,158. **Oil-Can Faucets.**—G. W. Banker, New York, N. Y.

158,160. **Solutions for Galvanic Batteries.**—Louis Bastet, Philadelphia, Pa., assignor to Elihu R. Pettit, same place. 1. The compound resulting from dissolving bichromate of potash in nitric acid so as to produce nitro-chromic acid. 2. The application of the compound, in the proportion of about one ounce of the compound to one pound of sulphuric acid of the strength of 45° Baumé in each porous cup.

185,180. **Lubricating Bottles.**—C. Jones, New York, N. Y.

185,189. **Invalid Chairs.**—Smith H. Platt, Brooklyn, N. Y.

185,214. **Compounds for Disinfecting.**—Henry B. Condy, Battersea, London, S. W., England. Consists of manganate or permanganate of an alkali or alkaline earth and chloride of sodium.

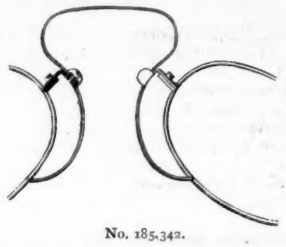
185,249. **Oil-Cans and Faucets.**—A. H. Marshall and Geo. W. Marshall, Lower Lake, Cal.

185,288. **Galvanic Batteries.**—Chas. F. Brush, Cleveland, Ohio, assignor of one-half his right to the Telegraph Supply Company, same place.

185,307. **Apparatus for Evaporating Waste Alkaline Solutions.**—Wm. G. Eutrekin, Philadelphia, Pa.

185,329. **Cup-Leather Packings for Pumps and Syringes.**—Thos. Kennedy, Philadelphia, Pa., assignor to R. McCambridge, same place.

185,342. **Eyeglasses.**—George W. Meigs, Reading, Pa., assignor to Thos. A. Willson, Gilie J. Willson, and C. B. Bishop, same place.



No. 185,342.

185,356. **Bottle-Washing Machines.**—H. Schmidt and J. Dixon, Morrisania, New York, N. Y.

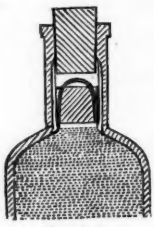
185,368. **Invalid-Beds.**—Flavius J Underwood, North Springfield, Mo.

185,373. **Invalid-Bedsteads.**—J. U. Wetmore, Erie, Pa.

Re-issued.

7,424. **Bottle-Stopper Fasteners.**—C. H. Porter, Albany, N. Y., assignor to William R. Clough, Newark, N. J.

No. 7,424.



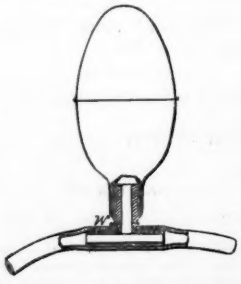
No. 185,433.

185,433. **Liquid Dropper for Bottles.**—C. E. Davis, St. Helena, Cal. A short cork is pushed down into the neck of the bottle, far enough to be out of the way of the larger one above, and is provided with a loop for its extraction. There are grooves in the inner surface of the neck, opposite the site of the short cork, which permit the passage of fluid and air.

185,444. **Invalid-Chairs.**—C. H. Hermance, Boston, Mass.

185,453. **Oil-Tanks.**—Stephen D. Osborne, Keene, N. H.

185,464. **Syringes.**—William V. Wallace, Boston, Mass. A metal washer (W) fits loosely over the upright part



No. 185,464.

of the metal connection between the bulb and the single rubber tube, and when forced down holds the rub-

ber tightly between its lower concaved surface and an interior metal core.

185,483. **Compositions for Coating the Insides of Barrels.**—D. F. Bowker, Fitzwilliam, assignor to Pargetized Can Company, Keene, N. H. A composition of glue, water, glycerine, nitric acid and chloride of sodium.

No. 185,556.

185,518. **Bottling Aërated or Effervescing Liquids.**—W. Gee, New York, N. Y.

185,565. **Liquid-Forcing Apparatus.**—W. Noll, Minden, Prussia.

185,556. **Bottle-Stoppers.**—George A. Ohl, Newark, N. J. A rigid curved stopper with a loop in lower end attached loosely to the collar around the neck of the bottle. A pivoted lever closing-bail holds the stopper in place.

185,595. **Combined Abdominal and Breast Supporters.**—E. E. Van Vleck, Chicago, Ill. A combination of breast-supporter and abdominal bandage, joined behind and at the sides, but open in front. Provided with an extra row of button-holes, elastic gussets, and shoulder-straps, as shown. This arrangement is calculated to keep the supporter in position, and permit of its being opened to gain free access to the breast.

No. 185,595.

185,604. **Filter-Racks.**—Henry S. Watt, Boston, Mass. A wire-cloth cone or rack is placed inside of an ordinary funnel, to give support to a paper filter, and keep it from contact with the funnel.

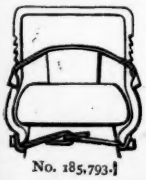
185,614. **Bungs for Barrels.**—John A. Wright, Keene, N. H., assignor of one-half his right to S. D. Osborne, same place.

Patents granted Dec. 26, 1876.

185,622. **Electro-Vapor Baths.**—G. W. Brown, Rockford, Ill.

185,626. **Oil-Cans.**—Wm. H. Clark and Wm. J. Clark, Salem, Ohio.

185,793. **Bottle-Cork Fasteners.**—D. G. Smith, Carbondale, Pa., assignor of one-half his right to J. Kilpatrick, same place. The side bars or standards of the bail are notched on the outside, and pass up through elongated perforations or slots into a flat locking-plate, near the ends thereof. The notches are inclined downwards, so that the hooks which incline upward, when engaged with the notches, cannot be displaced by an upward pushing force.



No. 185,793.

185,640. **Apparatus for Manufacturing Hydrosulphurous Acid.**—W. D. Jones, Hagerman's Mills, N. Y., assignor of one-half his right to H. H. Pawling, same place.

185,667. **Making Salt.**—A. T. Brown, Zilwaukie, Mich.

185,669. **Compositions for Coloring Wood.**—J. G. Cashin, Gardner, Mass.

185,680. **Label-Holders.**—S. A. Hughes, Brooklyn, N.Y.

185,694. **Bottle Stoppers.**—Q. S. Newton, Binghamton, N. Y.

185,697. **Nozzles for Cans.**—S. R. Pinkney, New York, N. Y.

185,731. **Weighing Scales.**—L. W. Cross, Angola, Ind.

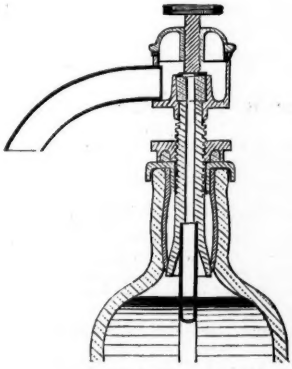
185,748. **Paint Cans.**—P. Hickey, Philadelphia, Pa., assignor to Le Compte & Perkins Manufacturing Co. (limited), same place, and said Le Compte & Perkins Manufacturing Co. (limited) assignors to Geo. H. Perkins, same place.

185,782. **Abdominal Supporters.**—Ruth T. Reed, Rochester, Ind. The suspending straps of the supporter are attached so as not to press upon the breasts, and the perineal straps are in one and the same piece with the body of the supporter.

No. 185,782.

Patents granted Jan. 2, 1877.

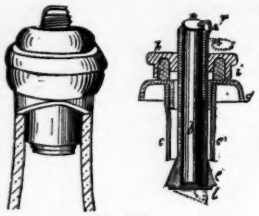
185,852. **Combined Siphon-Tap and Stopper for Aërated Liquid Bottles.**—H. J. Cole, Wandsworth Road, England.—The combination, in a bottle-stopper, of an elastic packing and a cone for expanding the same, with a siphon tube and a valve, whereby the apparatus, as a whole, may be attached to or detached from the bottle at will.



No. 185,852.

185,853. **Siphon-Tap and Stopper for Aërated Liquid Bottles.**—Henry J. Cole, Wandsworth Road, England. 1. A bottle-stopper provided with an elastic packing *c*, and a tube, *b*, having a cone, *e*, for expand-

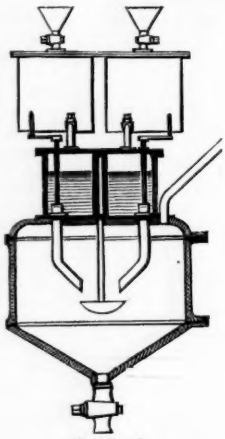
ing the packing, in combination with a valve, *l*, having a wire or rod, *n*, for operating the same; *h* is a screw-cap for tightening the elastic packing.



No. 185,853.

185,900. **Stills.**—J. G. Ellerhorst, Bellevue, Ky.

185,964. **Apparatus for Manufacturing Sulphurous Acid.**—Alvaro F. C. Raynoso, Paris, France. The



No. 185,964.

acids and solutions from which the sulphurous acid is generated are brought from the supply tanks, and the chemical reaction takes place in the cups.

PRESCRIPTIONS AND FORMULÆ.

Elixir of Monobromated Camphor. (Dambier.)

Monobromated Camphor	0.50 grammes.
Alcohol, 56 per cent	60. "
Powdered Sugar	40. "

Dissolve the sugar in the alcohol with the aid of heat, and filter if necessary; in the clear hot filtrate dissolve the monobromated camphor, and flavor according to taste. A tablespoonful of this elixir weighs about 20 grammes, and contains 0.10 gm., or 1½ grains of monobromated camphor.

Bronchial Tablets. (Salmiak-Pastillen, Tablettes pectorales, etc.)

℞. Ammonium Chloride	10 parts.
Powd. Ext. Liquorice	80 "
Powd. Sugar	30 "
Powd. Tragacanth	2 "
Glycerine	5 "
Distilled Water	q. s.

Make into a mass, to be divided into rhombic tablets, 10 or 12 m.m. long. *(Pharm. Centralh.)*

Boracic Acid Ointment. (Lister's).

℞ Boracic Acid, powdered	1 part.
White Wax	1 "
Oil of Almonds, expressed	2 "
Paraffin	2 "

Melt. Stir thoroughly in a heated mortar till the mass begins to thicken.

Casein Cement.—An excellent cement, or liquid glue, may be prepared by coagulating milk with acetic acid or vinegar, washing the precipitated casein with pure water, and then dissolving it in a saturated solution of borax. This produces a clear liquid, of thick consistence, which has an extraordinary adhesiveness and a great lustre.

Administration of Salicylic Acid.—Mr. J. U. White, of Clifton, England, is the author of a statement that the combination of salicylic acid with one-tenth its weight of borax, and the same proportion of glycerin and gum tragacanth, makes an excellent pill mass. A 6½ grain pill will contain 5 grains of acid, and will not be inconveniently large.

Aromatic Elixir Rhubarb and Fluid Magnesia.

By "COUNTRY CHEMIST."

Amongst all of the published formulas for elixirs I have been unable to find one for this, which in some sections of the country has quite an extensive sale. I have found that the following makes an excellent article:

℞. Rhubarb (in coarse powder)	℥ 3 and 90 grs.
Sulphate Magnesia	℥ 2 and 96 grs.
Sugar	4 ℥
Spts. Menth. Pip., *U.S.P.*	1 ℥
Alcohol,	
Water	āā q. s.

Moisten the rhubarb with dilute alcohol and pack in a cylindrical percolator. Percolate with a menstruum of one part alcohol to four parts water, until two pints of tincture are obtained. To this add the sulphate of magnesia, sugar and peppermint, and let it stand in a moderately warm place for twenty-four hours, then filter.

Simple Elixir.

℞. Spirit of Orange (1:10)	2 fl. ʒ
" Cinnamon (1:10)	10 ♏
Alcohol	4 fl.
Syrup	6 fl.
Water	6 fl.

Red Elixir.

℞. Simple Elixir	15½ fl.
Comp. Tinct. of Cochineal	½ fl.

Elixir of Calisaya.

℞. Tinct. Cinchona	3 fl.
Simple Elixir	13 fl.

Mix and filter.

Elixir of Calisaya and Iron.

℞. Elixir Calisaya	15 fl.
Warm Distilled Water	1 fl.
Ammonio-citrate of Iron	128 grs.

Dissolve the iron in the water and mix.

Elixir of Iron and Quinia.

℞. Iron and Quinia Citrate	256 grs.
Distilled Water	1 fl.
Simple Elixir	15 fl.

Dissolve and mix.

Elixir of Iron, Quinia, and Strychnia.

℞. Quinia (alkaloid)	128 grs.
Strychnia (alkaloid)	2½ grs.
Pyrophosphate of iron	256 grs.
Alcohol	5½ fl.
Spirit of Orange (1:10)	½ fl.
Distilled Water	4 fl.
Syrup	6 fl.

Dissolve the pyrophosphate of iron in the distilled water and add the syrup; dissolve the strychnia in the alcohol, add the spirit of orange, and then the quinia; mix the two solutions.

Elixir of Calisaya, Iron, and Bismuth.

℞ Ammonio-citrate of Bismuth .....256 grs.
Ammonio-citrate of Iron.....256 grs.
Distilled Water, warm.....2 fl. ℥ij
Elixir of Calisaya .....q. s. ad. 16 fl. ℥j

Elixir of Beef, Iron, and Wine.

℞ Extract Beef (Liebig's).....½ ℥ss
Ammonio-citrate of Iron.....256 grs.
Spirit of Orange (1 : 10) .....½ fl. ℥ss
Distilled Water.....1½ fl. ℥iij
Sherry Wine.....q. s. ad. 16 fl. ℥j

Dissolve the ammonio-citrate of iron in the water; dissolve the extract of beef in the sherry wine; add the spirit of orange, and mix the solutions.

Elixir of Calisaya, Iron, Bismuth, and Strychnia.

℞ Ammonio-citrate of Bismuth.....256 grs.
Citrate of Iron and Strychnia.....128 grs.
Distilled Water, warm .....2 fl. ℥ij
Elixir of Calisaya .....q. s. ad. 16 fl. ℥j

Note.—128 grains of citrate of iron and strychnia, U.S.P., contain about 1½ grain strychnia.

Elixir of Pepsin and Bismuth.

℞ Saccharated Pepsin.....256 grs.
Ammonio-citrate of Bismuth .....256 grs.
Spirit of Orange .....½ fl. ℥ss
Syrup.....2 fl. ℥ij
Sherry Wine.....q. s. ad. 16 fl. ℥j

Elixir of Pepsin, Bismuth, and Strychnia.

℞ Acetate of Strychnia.....1 grain.
Elixir of Pepsin and Bismuth.....16 fl. ℥j

N.B. The quantities of active ingredients, as iron or alkaloids, in these preparations, is supposed to be indicated or directed by the physician, who may vary them as occasion requires.

"Digerentia Lozenge."—A new remedy for dyspepsia. The composition of this lozenge, originated by Dr. Elmer, is as follows:

Lacto-phosphate of Lime.....gr. i.
" " " Magnesia.....gr. ½.
" " " Iron.....gr. 1/16.
Pepsin.....gr. i.
Diastase.....gr. i.
Oil of Musk.....gr. i.
Glucose.....q. s.

They may be obtained from the wholesale agents, McKesson & Robbins, N. Y.

Cod Liver Oil Jelly.—The following formula, published by Mr. Pratt, of York, England, originated with Mr. Agnew, of Liverpool, and is highly recommended:

	Parts.
Ol. Morrhuæ	72.000
Sacch. albi	16.880
Acidi citric	0.600
Gelatinæ	2.760
Aquæ	7.560
Ol. essent	0.200
	100.000

Preparation of Raw Meat.—The following directions are given by the *Journal de Pharmacie* or the preparation of raw meat for invalids: Beef is preferable to mutton. The fat should be removed (one reason being that it may contain cysticercus). The best part is the *rump steak* (*sic*). The fibres are here best suited for rasping (*râpage*) in longitudinal direction. This is the best mode of division. Chopping removes from the meat most of its juice, and does not give such good division. The rasping is done with a sharp knife-blade—the sharper the better. The piece of meat should be pretty thick, and of lozenge shape; the rasping can be done on all the facings, in the natural direction of the muscular fibre. The piece should rest, held by one end, on a resistant and slightly inclined plane. The meat is generally reduced to the form of a pill or bolus, which is rolled in powdered sugar or crumbs of bread. If it cannot be taken thus, it may be given under the mask of bouillon, which should be cold. One of the best methods is to prepare a thin porridge of tapioca; let it cool until it cannot cook the meat in the least. Then the meat, finely rasped, is introduced into a small quantity of the cold soup till the mixture is complete. This mixture has the aspect and consistence of a fine soup of tomatoes. Next the tapioca porridge is gradually poured on this soup, the mixture being constantly stirred. Thus a homogeneous porridge is obtained, in which the meat is so well concealed that no one would detect it unless previously advised of its presence.

For Chilblains.—Melt together in a suitable vessel, three ounces beeswax, three ounces Venice turpentine, eight ounces lard, and one pint sweet oil. Stir these well together, and raise the temperature till the mixture simmers; then allow it to cool. This should be applied to the feet on a piece of cloth when going to bed.

Neuralgic Pill.

℞ Quiniæ sulphatis..... gr. i.
Ferri et potassæ tart..... gr. ij.
Morphiæ sulph..... gr. 1/24 ad 1/12. M.

Take every hour until an expected paroxysm has been missed.

Recommended by Mr. Gregory and Dr. Brudenell-Carter, in periodic neuralgia, l. c., p. 121.

ITEMS.

College of Pharmacy of the City of New York.—At a Conversational Meeting of the members of the College, held on Thursday evening, January 18th, the subject of the Metric System was discussed in its various bearings. All the members who took part in the discussion were in favor of its adoption (some of the remarks made will be found on page 52, and it now only remains to be seen whether physicians will observe their resolution, passed at the meeting of the County Medical Society. For the benefit of the medical profession, we desire to state that many pharmacists have provided themselves with the requisite weights, and will be ready to use them when called upon.

The examination of the candidates for graduation will take place as follows: Feb. 19, 21, 23, from 6 to 7 P.M., Practical Examination. March 1, 3, 6, from 1 to 6 P.M., Theoretical and Oral Examination.

The annual meeting of the College, at which officers for the ensuing year are to be elected, will be held on Thursday, March 15th, at 8 P.M. The Commencement will take place on Tuesday, March 20th, at 8 P.M., at Chickering Hall.

Teli.—The Jardin d'Acclimatisation of Paris has received a number of specimens of *Erythrophlæum Guineense*, the source of the poisonous mancona bark or teli used by the natives of Africa in ordeals. Its proper home is the neighborhood of the Rio Nunez, which empties into the Atlantic under 10° 10' N. L., in Senegambia. [See also p. 39.]

A Useful Vegetable Oil.—The French Consul at Canton has drawn attention to a tree the oil of which he thinks might be used as a preventive against the ravages of the phylloxera. The tree is the *Elæococca Vernicia*, and the oil it yields is universally used in China for protecting the wood of houses, ships, furniture, etc., from the pernicious effects of moisture and the ravages of insects. It renders any texture impenetrable, is a powerful siccative, and enters largely into the composition of the Japanese varnish.

The Night Medical Service in Paris.—Since this service was inaugurated on the 1st of January, 1876, 12,768 persons have applied for assistance, and a very large proportion have reimbursed the expenses.

Early Closing among London Druggists.—A movement has commenced among the chemists and druggists at the West End of London for lessening the number of hours during which their shops will be kept open.

Monument to Linnæus.—The monument to Linnæus is to be unveiled in Stockholm on the 10th of January next. 36,000 crowns have already been collected.

The Legal Value of Foreign Coins.—In accordance with the law passed in 1873, which provides that the Director of the Mint shall make an annual estimate of the values of the standard coins in circulation, of the various countries of the world, which estimate shall be proclaimed on the first day of January, by the Secretary of the Treasury, the following table has been issued: The rates here given are the ones which will govern the customs officers in estimating the values of all foreign merchandise during the coming year:

Country.	Monetary Unit.	Standard.	Value in U. S. Money.
Austria	Florin	Silver	$0.45.3
Belgium	Franc	Gold & sil.	.19.3
Bolivia	Dollar	Gold & sil.	.96.5
Brazil	Milreis of 1,000 reis.	Gold	.54.5
British Possessions in N. A.	Dollar	Gold	1.00
Bogota	Peso	Gold	.96.5
Cent. America	Dollar	Silver	.91.8
Chili	Peso	Gold	.91.2
Denmark	Crown	Gold	.26.8
Ecuador	Dollar	Silver	.91.8
Egypt	Pound of 100 piasters	Gold	4.97.4
France	Franc	Gold & sil.	.19.3
Great Britain	Pound sterling	Gold	4.86.6½
Greece	Drachma	Gold & sil.	.19.3
German Emp.	Mark	Gold	.23.8
Japan	Yen	Gold	.99.7
India	Rupee of 16 annas	Silver	.43.6
Italy	Lira	Gold & sil.	.19.3
Liberia	Dollar	Gold	1.00
Mexico	Dollar	Silver	.99.8
Netherlands	Florin	Gold & sil.	.38.5
Norway	Crown	Gold	.26.8
Peru	Dollar	Silver	91.8
Portugal	Milreis of 1,000 reis.	Gold	1.08
Russia	Rouble of 100 cop'ks.	Silver	.73.4
Sandwich Isl.	Dollar	Gold	1.08
Spain	Peseta of 100 c'nt'ms.	Gold & sil.	.19.3
Sweden	Crown	Gold	.26.8
Switzerland	Franc	Gold & sil.	.19.3
Tripoli	Mahbud of 20 piastrs.	Silver	.82.9
Tunis	Piaster of 16 caroubs.	Silver	.11.8
Turkey	Piaster	Gold	.04.3
U. S. of Colom.	Peso	Silver	.91.8

A Defence Association has been organized by the Irish pharmacists, and Mr. J. T. Holmes, of Dublin, has been chosen to be its secretary.

Therapeutics in Great Britain.—In reviewing a recently published treatise on the Theory and Practice of Medicine, Dr. W. Bathurst Woodman, of England, says: "As might be expected from Dr. ——'s antecedents, pathology and prophylaxis are most carefully rendered and form a distinguishing feature of the work. As in all modern works on physic, the treatment of disease receives less attention in this treatise than its diagnosis and *post-mortem* phenomena. We think this is to be regretted on more grounds than one. The neglect of treatment on the part of orthodox practitioners is the stronghold of quackery. The self-dubbed Dr. Smellfungus, graduate of a college *in nubibus*, sees a patient, relieves his pains, gives him tranquil nights, and at least a few days of enjoyable life, whilst the graduate in honors of the old and celebrated universities, who is perhaps, in addition, Member or Fellow of the Royal College of Physicians or Surgeons, sends the patient away, or leaves him, after making an elaborate diagnosis, with some peppermint water, or some other equally futile prescription, which affords no relief either to his body or to his mind.

"Dr. ——'s book is no worse than others in this matter. It is perhaps rather better. But unless something be done to advance the study of rational therapeutics, quackery must and will flourish on our island."

Drugs Rejected at the Port of New York.—We have received from the Appraiser's office the following account of drugs rejected at this port during the year 1876, and the reasons therefor:

1 Case Peruvian Bark. Not of requisite strength and purity.

2 Bales Peruvian Bark. Not of requisite strength and purity.

6 Bales Taraxacum root. Damaged, not fit for medicinal use.

2 Bales Aconite root. Damaged, not fit for medicinal use.

2 Bales Senna leaves. Damaged, not fit for medicinal use.

4 Bales Colchicum seed. Damaged, not fit for medicinal use.

62 Boxes Gum Guaiacum. Not of requisite strength and purity.

14 Cases Gum Guaiacum. Not of requisite strength and purity.

1 Barrel Gum Guaiacum. Not of requisite strength and purity.

12 Half-barrels Gum Guaiacum. Not of requisite strength and purity.

2 Casks Althæa root. Damaged, not fit for medicinal use.

16 Cases Guarana. Damaged, not fit for medicinal use.

3 Cases Rhubarb. Damaged, not fit for medicinal use.

1 Keg Ipecac root. Spurious.

Quantities and Values of some Domestic Products Exported from the United States in 1876:

	Quantities.	*Values in Dollars.*
Candles, all kinds, etc. lbs.	756,986	117,841
Drugs, Chemicals, etc	.....	2,263,389
Ginseng, lbs.	87,006	119,745
Hops, lbs.	8,114,778	1,119,128
Oil Cake, tons	88,556	3,759,096
Petroleum, crude, galls.	15,967,289	1,191,639
Naphtha, galls.	9,448,476	1,086,718
Petroleum, refined, illuminating, galls.	118,226,935	24,172,936
Heavy lubricating oils, galls.	563,834	185,617
Sperm oil, galls.	704,230	1,011,015
Other fixed oils (whale, lard, etc.,) galls.	1,027,648	512,088
Volatile or essential oils	.....	326,006
Paints and colors	.....	150,000
Perfumery	.....	243,205
Quicksilver, lbs.	82,279	55,386
Soap, all kinds, lbs.	7,501,921	488,736
Spirits of Turpentine, galls.	714,063	266,801
Spirits from grain, etc., galls.	131,144	79,014
Starch, lbs.	6,925,827	353,213
Tobacco leaf, lbs.	155,091,817	16,584,635
Tobacco manufactured	.....	2,595,135
Varnish, galls.	22,761	34,062

Medical and Pharmaceutical Statistics of Prussia.—The kingdom of Prussia, which contains, according to the last census, 24,693,112 inhabitants, has 7,952 physicians, inclusive of 791 belonging to the army, and 146 employed in hospitals. There are besides, 284 dentists; 2,305 male nurses; 426 female lay-nurses; 1,063 diakonissen (deaconnesses); 3,409 sisters of charity and of other orders; and 16,951 examined midwives.

The number of drug-stores is 2,357, including branch-stores. In the case of 874 of these, the right of the exercise of the profession is primarily attached to real estate, and in the case of 1,379 it is inherent in the person of the proprietor. 18 drug-stores are the property of the State or of corporations. 853 stores (36%) are carried on without clerks or apprentices; 821 with only one clerk or apprentice; 432 stores employ each two clerks; 108 three; 104 four; and only 30 stores employ each five or more assistants. The whole number of persons connected with pharmacy is 5,081, of which 2,372 are proprietors, lessees, or managers; 982 examined assistants; 899 unexamined assistants; and 828 are apprentices.